“A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION AMONG MENOPAUSAL WOMEN IN SELECTED AREAS AT ERODE.”

By

Register No: 301426901

Dissertation Submitted to

THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY

Chennai, Tamilnadu.

In partial fulfillment

Of the requirements for the degree of

Master of Science

In

Community Health Nursing

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NANDHA COLLEGE OF NURSING

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AFFILIATED TO THE TAMILNADU DR. M.G.R

MEDICAL UNIVERSITY, CHENNAI.

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In partial fulfillment of the requirement for
Degree of Master of Science in Nursing

VIVA VOCE:

1. INTERNAL EXAMINER :_____

2. EXTERNAL EXAMINER :_____

ENDORSEMENT

This is to certify that the dissertation entitled **"A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION AMONG MENOPAUSAL WOMEN IN SELECTED AREAS AT ERODE."** is a bonafide research work by **MS.Kokilapriya.S, Nandha College of Nursing, Erode** in the partial fulfillment of the university rules and regulations for award of **M.Sc. in community health Nursing** under my guidance and supervision during the academic year 2015-2016.

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"Man's effort is always crowned by God's grace and blessings." Express my deep sense of gratitude to the **God Almighty** for the blessings and mercy which enabled me to reach up to this step and complete my study.

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Researcher

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OBJECTIVES

1. To assess the knowledge among menopausal women, before and after video assisted teaching programme regarding osteoporosis and its prevention.

2. To implement and evaluate the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women.

3.To find out the association between knowledge of menopausal women regarding osteoporosis and its prevention with selected demographic variables such as age, marital status, education, religion, occupation, socio economic status, type of family, and family history of osteoporosis.

HYPOTHESIS

H_1- video assisted teaching programme will be effective in improving the knowledge regarding osteoporosis and its prevention among menopausal women.

H_2- There will be significant association between the knowledge of menopausal women regarding osteoporosis and its preventions with their selected demographic variables

such as age, marital status, education, religion, occupation, socio economic status, type of family, and family history of osteoporosis.

METHODOLOGY

The research approach used for this study was Quantitative educative and evaluative approach and the research design was quasi-experimental design.60 menopausal women were selected for this study by using purposive sampling technique. Data were collected with the help of self structured knowledge questionnaires. Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (chi-square, paired 't' test, unpaired 't' test) were used to analyze the data and to test hypothesis.

RESULT AND INTERPRETATION

- The collected data was organized and analyzed according to the objective of the study using descriptive and inferential statistics in order to determine the effectiveness of video assisted teaching programme.
- The frequency and percentage of pre test and post test level of knowledge regarding osteoporosis and its prevention among menopausal women in experimental group. In pre test majority of menopausal women 17(57 %) had inadequate knowledge and 13(43 %) moderately adequate knowledge and none of them have adequate knowledge, whereas in post test majority of menopausal women 20(67%) had adequate knowledge and 10(33%) of them had moderately adequate knowledge and none of them have inadequate knowledge.
- The comparison of pre test and post test score of knowledge in experimental group. The mean pre test score is 8.1 and mean post test score is 17.9. The paired 't' test value was 10.11 when compared to table value (2.02) is high. It seems that video assisted teaching programme makes significant difference between pre test and post test score of knowledge in experimental group.

- Analysis of the difference between the mean post test score of knowledge in control and experimental group. The mean post test value of control group was 7.4 which is lesser than the post test value 17.9 of experimental group. The unpaired‘t’ value was 11.3When compared to table value (2.02) is high. The findings shows there is significant increase in the level of knowledge in experimental group then control group. It indicates the effectiveness of video assisted teaching programme is increasing knowledge level regarding osteoporosis and its prevention.
- There was significant association between the post-test score of Knowledge in control group and family history of osteoporosis (**$p<0.05$**)
- There was no relationship exist between score of knowledge and selected demographic variables in experimental group.

CONCLUSION

The following conclusions were drawn from the study,

This study proved to be very essential as video assisted teaching programme play an important role in enhancing knowledge regarding osteoporosis and its prevention among menopausal women.

- The level of knowledge regarding osteoporosis was increased among Menopausal women who received video assisted teaching programme.

RECOMMENDATIONS

- A similar study can be conducted on a larger sample.
- A similar study can be done using true experimental design.
- A similar study can be conducted with a post-test after 4 weeks, 6 weeks interval to evaluate the retention of knowledge.
- A comparative study can be conducted among menopausal women at rural and urban areas.

KEY WORDS

Video assisted teaching programme, osteoporosis and its prevention, menopausal women.

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CHAPTER I

INTRODUCTION

"Primary prevention includes all health promotion efforts as well as wellness education activities that focus on maintaining or improving the general health of individuals, families and communities"

Edelmen and Mandle.

Health is a fundamental human right. It is central to the concept of quality of life. Health and its maintenance is a major social investment and is World-wide social goal. Health is multidimensional. This health may be assessed by such indicators as death rate, infant mortality rate and expectation of life. Ideally, each piece of information should be individually useful and when combined should permit a more complete health profile of individuals and communities.

Indian journal of community medicine (2007).

National osteoporosis awareness and prevention month is celebrated each May, and becomes a chance for our Nation to become more familiar with the effects of this disease, and about the preventable steps that we can to deal with it. Osteoporosis is defined by the World Health Organization (WHO) as a bone mineral density that is 2.5 standard deviations or more below the mean peak bone mass as measured by DXA; the term "established osteoporosis" includes the presence of a fragility fracture. **(WHO)**

Osteoporosis is a systemic skeletal disorder characterized by compromised bone strength predisposing to an increased risk of bone fracture .The normal homeostatic mechanism is altered. The rate of bone re absorption is greater than the bone turnover is altered. In osteoporosis the bone became progressively porous, brittle and fragile they fracture easily under stresses that would not break normal bone.

International Osteoporosis Foundation (2009)

Osteoporosis is a disease of bones that leads to an increased risk of fracture. Osteoporosis literally means 'porous bones'. The two Greek words which make up the term osteoporosis are

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"osteon" which means bone and "poros" which means pore. In osteoporosis the bone mineral density is reduced, bone micro architecture is deteriorating, and the amount and variety of proteins in bone is altered.

Amer Shakil ,Nora E Gimpel(2011)

Menopause derived from the latin word ‘meno’ means month and ‘pausia’ means halt and it marks the end of the woman’s fertility period . Postmenopausal syndrome is one which ranges from hot flushes and irritability to osteoporosis and heart disease and is experienced by all women in varying degrees.

Liya Bavadan, India's National Magazine, 2004

Menopause is one of women’s most important life stages. Menopause also known as “the change” or “change of life” is a normal part of women’s life. The word menopause is derived from the Greek word ‘men’ meaning month and ‘pauses’ meaning cessation.The average age of menopause is 52 but it can happen anytime between the ages 42 and 56. Women can say she has entered menopause when she has not had periods for a full year.

Pankaj Desai(2008)

The occurance of osteoporosis in menopausal women is very common problem especially in India who are expose to many of the risk factors like family history of osteoporosis, low calcium diet, vitamin D deficiency, history of anorexia. The pathogenesis of menopausal osteoporosis involves the interplay of many factors like nutritional, environmental and genetic factors.

Indumathi V, Vidya. S. Patil(2007)

The seriousness of the problem can be judged by the facts that Osteoporotic fractures are four times more common than strokes. 50 years old women have equal chance of dying from of complication of osteoporosis as from breast cancer or the combined lifetime risk for hip, forearm

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and vertebral fractures coming to clinical attention is around 40%, equivalent to the risk for cardiovascular disease. The overall mortality is about 20% in the first year after hip fracture .The process of demineralization leading to osteoporosis speeds up in women in the years after the menopause. This is because the ovaries stop producing the female sex hormone-estrogen, which is one of the substances that help to keep bones strong.

International osteoporosis foundation

According to estimates, there are about 300 million people with osteoporosis in India and suspect it may be more over double the population of Australia. The evidence based on ageing population indicates that there may be a 50 per cent increase in the number of people with osteoporosis in India in the next 10 years. So, this is a huge problem in India.

-Joyce and Black

The World Health organization reveals that one out of three adult females in India suffers from osteoporosis, making India one of the worst affected countries in the world. The Arthritis Foundation of India says there has been an estimated 200 per thousand cases across Asia in 10 years.

Charles-Journal of clinical Osteoporosis(2004)

The Indian population, it is now being realized that as in the West osteoporotic fracture is a major cause of morbidity and mortality in the elderly. Based on 2001 census, approximately 163million Indians are above the age of 50; this number is expected to increase to 230 million by 2015. Even conservative estimates suggest that of these 20 per cent of women and about 10-15 per cent of men would be osteoporotic. The total affected population would therefore be around 25 million. If the lower bone density is shown to confer a greater risk of fracture that is expected the figure can increase to 50 million.

N Malhotra, A Mithal(2008)

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It is estimated that around 25 million Indians are affected with osteoporosis. Osteoporotic fractures in India occur commonly in both sexes, and may occur at younger age than in the Western countries.

Vidya Iyengar(2010)

Bone mass changes in a person's life time can be categorized into three phases – Growth, Consolidation and Involution. Peak bone mass is accumulated in the growth phase, about 90% of ultimate bone mass is deposited in the space this is followed by consolidation which lasts for 15 years. The involution starts between ages 35-40 years in both sexes, with acceleration of bone loss within a decade after menopause in women. The prevalence of osteoporosis and low bone mass is expected to increase worldwide with increased aging of the population. Across the globe, the number of individuals aged 50 years and greater is expected to increase nearly fivefold by the year 2050, from 323 million to 1.55 billion.

Saunders, Missouri, 2007

In addition to age the factors that place women at risk of skeletal fragility are early natural or surgical menopause, low levels of estrogen, low body weight and height, low levels of vitamin D, low Calcium intake, high caffeine intake, low levels of physical activity, smoking alcohol abuse, family history of osteoporosis and use of certain drugs. Some gynecological factors are also been implemented in the pathogenesis of osteoporosis, including parity, breast feeding, late menarche and menstrual irregularities.

Medscape General Medicine, 2000

During puberty and adolescence the skeleton takes up calcium rapidly and builds up its reserves. This intake of calcium into the bone is largely depends on calcium and vitamin D nutrition as well as exercise. The strength of the bone is built during two decades of life that is from onset of adolescents to about age 30 years. From the mid 30s there is gradual progressive bone loss which continues throughout life and is accelerated at the menopausal women.

Indian Journal of Clinical Biochemistry(2007)

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Life style includes lack of exercises, lack of Low Vit-D intake and Low calcium intake, Smoking also associated with age and menopause related changes and secondary caused by medication or endocrine disorders. Primary osteoporosis has been described as a geriatric disease with an adolescent onset; highlight the importance of beginning to take steps early in life to reduce its disability impacts in later years and early diagnosis of the disease by providing updated and reliable information through appropriate health promotion and professional Medias.

***Werner P* (2005)**

With the onset of menopause, rapid bone loss occurs to approximately 2% to 3% over the following 5- 10 years, being greatest in the early postmenopausal years. Lifetime losses may reach 30% to 40% of the peak bone mass in women.

Al amen medical.org/article(2010)

In childhood, bones grow and repair very quickly, but this process slows down as you get older. Bones stop growing in length between the ages of 16 and 18, but continue to increase in density until late 20s. From about the age of 35, gradually lose bone density. This is a normal part of ageing, but for some people it can lead to osteoporosis and osteoporosis is a condition that affects the bones, causing them to become weak and fragile and more likely to break.

Barbara.K-2006

The leading cause of osteoporosis is a lack of certain hormones, particularly estrogen in women and androgen in men. Women, especially those older than 60 years of age, are frequently diagnosed with the disease. Menopause is accompanied by lower estrogen levels and increases a woman's risk for osteoporosis. Other factors that may contribute to bone loss in this age group include inadequate intake of calcium and vitamin D, lack of weight-bearing exercise and other age-related changes in endocrine functions. **John Dolyle(2006)**

Before a woman reaches 30 years of age her body gains more bone than it loses. Around age 30, this process balances out. However, the onset of menopause around 50 years of age may speed up the rate of bone loss. If bone loss becomes severe, a woman may develop osteoporosis. The condition can be prevented by exercising regularly and making some other lifestyle changes

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Lewis-2005

Osteoporosis is a preventable disease. Through appropriate education and lifestyle changes, the incidence of osteoporosis can be reduced. It is important that women should have knowledge regarding risk factors for osteoporosis and preventive health behaviors. Researcher strongly felt that since the youth are at risk and unaware about this silent killer, imparting knowledge at a younger age can prevent osteoporosis to certain extent. The need for prevention of this silent killer is must, as this has become the major life threatening disease.

World Health Organization

Osteoporosis can be prevented by taking the daily recommended amounts of calcium and vitamin D. Engage in regular weight-bearing exercise. Avoid smoking and excessive alcohol. Talk to your healthcare provider about bone health. When appropriate, have a bone density test and take medication.

cure osteoporosis today.com

October 20, World Osteoporosis Day provides an all-important focal point for informing and educating the general public and policy makers about the prevention of a disease which still suffers from poor general awareness. With the number of participating countries and scheduled events increasing steadily year by year, the impact of World Osteoporosis Day has grown significantly

Journal of community Health

Osteoporosis is a preventable disease that is not managed until the disease become evident. Although it places a huge economic and social burdens on the societies of world wide, it is predicted that this burden will grow if left unchecked. This scenario as well as the current study mandates the need for osteoporotic preventive behaviour education program, where by client s understand the determinants of bone health, and prevention of bone loss. Thus the potential burden of osteoporosis or osteoporotic fractures can be reduced.

Maria Pais. Nightingale Nursing Times(2010)

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NEED FOR THE STUDY

"It is very important that women of this country be made aware of the dangers of osteoporosis in the sense that it is a silent and invisible disease with no symptoms whatsoever."

Rita Moreno

According to WHO Osteoporosis is second only to cardiovascular disease a Global Health Care problem and medical studies show a 50 years old women has a similar lifetime risk of dying from hip fracture as from breast cancer, since osteoporosis affects the elderly population and menopausal women's which is growing, it will put a bigger burden to the health care system as treatment expensive unless swift activities are taken it can escate into an economic threat.

World Wide statistics reveal 200 million people are affected with osteoporosis and 80% of them are women. **Statistics reveals in India** about 50 – 60 millions Indians suffer from osteoporosis. This means that Indians problem is far more serious than of United States where only 15 million suffer from osteoporosis. 30 million women in India have osteoporosis and one in two Indian women above 45 years suffer.

WHO

According to the International menopause society 2006 there were more than 477 million menopausal women in the world. It is estimated that by the year 2030 there will be 1.2 billion women above the age of 50 and a growing number of these women can expect to live for several decades after menopause. Around 2.5% of Indian population belongs to middle age out of that 12.89% belongs to menopausal group. A woman may experience an early menopause due to ovarian failure as a result of chemotherapy, radiation, surgery, infection etc. Whether it is during or after menopause, a women is likely to experience health problems- physical and psychological- caused by hormonal changes.

Bimal K(2008)

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According to International osteoporosis foundation it is projected that more than 50% of all osteoporotic fractures will occur in Asia by the year 2050. Osteoporosis is many a times under diagnosed and under treated in Asia. The problem is particularly acute in rural areas. In countries like India and China, the majority of the population lives in rural areas, have the risk of getting osteoporotic fractures.

Vidya Iyengar, 2010

The international osteoporosis foundation estimates that osteoporosis affects about 200 million women **worldwide**. There is a direct relationship between the lack of estrogen after menopause and the development of osteoporosis. Estrogen helps to prevent bone loss and works together with calcium and other hormones and minerals to builds and remodels bone through a process called resorption and deposition. But once estrogen levels start to decline, this process slows down.

Reginster, Nansa Burlet(2005)

According to Osteoporosis society of India in *2003*, Action plan osteoporosis consensus statement of an expert group, New Delhi, stated that 1 out of 8 males and 1 out of 3 females in India suffer from osteoporosis, making India one of the largest affected countries in the world. Expert groups page the number of osteoporosis patients at approximately 26 million as per 2003 statistics, more than 30 million by 2004 with the number projected to increase to 36 million by **2013**. In incidence of hip fracture is 1 woman to 1 man in India. In most western countries, while the peak incidence of osteoporosis occurs at about 10 to 80 years of age, in India it may afflict those 10 – 20 years younger, at the age 50 – 60 years.

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With the onset of menopause, rapid bone loss occurs which is believed to average approximately 2% to 3% over the following 5 to 10 years, being greatest in the early postmenopausal years. Life time losses may reach 30% to 40% of the peak bone mass in women and 20 to 30% in men. In general, women lose about 1% of their bone density per year during and after menopause. however nearly 35% of women lose bone at a faster rate. during the late premenopausal period·

Indumathi V, Patil and Rama Jailkhani(2007).

Osteoporosis is greatly under diagnosed and undertreated in Asia, even in the most high risk patients who have already fractured. The problem is particularly acute in rural areas. In the most populous countries like China and India, the majority of the population lives in rural areas (60% in China), where hip fractures are often treated conservatively at home instead of by surgical treatment in hospitals. In a study among Indian women aged 30-60 years from low income groups, bone mineral density at all the skeletal sites were much lower than values reported from developed countries, with a high prevalence of and osteoporosis (29%) thought to be due to inadequate nutrition.

iof bonehealth.org

A study was conducted to evaluate the awareness, perception and knowledge of osteoporosis among 768 turkish rural women (40-70) years and they were selected by random sampling method. A structured interview schedule was done to assess the knowledge level. The results showed that that mean knowledge score was only 5.52 out of 20. Thus the study concluded that majority of the women were unaware about the risk factors and preventive methods of osteoporosis, so appropriate educational programs should be planned according to community needs.

Gemalza A, Oge A(2008)

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A descriptive study was conducted to assess the knowledge about osteoporosis ineducated Indian women at Nagpur. Participants were 73 educated women, correlation was seen between the level of knowledge with other variables. Data were collected by using questionnaire. The results of the study showed that they have lack of knowledge regarding osteoporosis.

Pande k, Tripathis(2005)

A study on prevalence of osteoporosis and awareness, education, prevention and treatment of osteoporosis was conducted among 200 peri and post menopausal women in postgraduate institute of Medical education and Research, Chandigarh, India. The results revealed that the prevalence of low BMD (bone mineral density) was found in more than half of the population (53%). The mean age in group 1 (normal BMD) was found to be 50.56±5.74 year as compared to 52.50±5.94 in group II with low BMD (P=0.02). Strategies to identify and manage low BMD in the primary care setting need to be established. So there is need for developing awareness programme to manage low bone mineral density among postmenopausal women.

Neelam A, Ainharan R(2011)

A correlation study was conducted to assess the knowledge of school teachers on osteoporosis at Chennai at tamilnadu, to assess the level of dietary calcium intake among school teachers, to correlate the knowledge on osteoporosis and calcium rich diet intake. Convenience sampling technique was used to collect data from 30 female school teachers working at Chennai using a structured questionnaire and observational checklist during the month of April 2009. The result revealed only 6 (20%) of them had moderate knowledge whereas the remaining 24 (80%) had poor knowledge. The analysis on dietary intake of calcium depicted that 16 (53%) belonged to moderate category and the rest to poor category. There existed a positive correlation between the knowledge on osteoporosis and calcium rich diet intake.

Sreelekha B. (Nightingale Nursing Times 2009)

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According to public health, there are three steps to prevention: primary, secondary, and tertiary. The prevention of osteoporosis is made up of general life style preferences and other more specific treatments. Keeping strong bone is the key to primary prevention and calcium build strong and health bones. Others include vitamin D, weight bearing exercise and hormonal therapy. During the growing year of adolescence and teen years, attention must be paid to dietary calcium if peak bone mass is to be achieved. Specific attention to dietary calcium intake may also be warranted beyond age 60 which may come in the form of increased food calcium or form specific calcium and vitamin D supplements. The main dietary sources of calcium include milk and other daily products such as cottage cheese, yogurt or hard cheese and green vegetable. Milk is the primary source of vitamin D. Exercise can help to prevent and treat thinning bones and should be done for at least 30 minutes three times per week. Any weight bearing exercise is recommended since it is most beneficial to increase the bone density, which is the primary factor in the prevention of osteoporosis. Smoking cigarettes can cause bones to become thinner and weaker. Stopping smoking can reduce the risk. Some medications like glucocorticoid medications, heparin, vitamin A and certain synthetic retinoid and antiepileptic drugs can lead bone thinning. Patient should ask their health care provider about the possibility that these medications should be replaced or the dose lowered. Hormone therapy is recommended for young women whose ovaries do not make estrogen normally.

Tokyo Metropolitan Geriatric Hospital

A study to assess the knowledge level of postmenopausal women on prevention of osteoporosis among 200 postmenopausal women aged 40 – 65 years was conducted in Malpe, Karnataka. The results revealed that of the 200 postmenopausal women 23% had good level knowledge, 65.5 % had average and 11.5% of women fell under the category of poor knowledge. Women of different age groups have moderate to poor knowledge about osteoporosis as well poor attitude and practice towards prevention of osteoporosis. Knowledge on osteoporosis is an essential component of women's health concerns.

Reshma RN, Shrisha, Maria Pais(Nightingale Nursing times 2010)

During the community posting the researcher has come across the complaint of knee joint pain among menopausal woman and many of them complaint that they are experiencing difficulties while performing the household activities. So the researcher felt the need to study this topic. This helps the menopausal women to prevent the occurrence of the disease

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STATEMENT OF THE PROBLEM

A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION AMONG MENOPAUSAL WOMEN IN SELECTED AREAS AT ERODE.

OBJECTIVES:

1. To assess the knowledge among menopausal women, before and after video assisted teaching programme regarding osteoporosis and its prevention.

2. To implement and evaluate the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women.

3.To find out the association between knowledge of menopausal women regarding osteoporosis and its prevention with selected demographic variables such as age, marital status, education, religion, occupation, type of family, socio economic status, and family history of osteoporosis.

HYPOTHESES:

H_1- video assisted teaching programme will be effective in improving the knowledge regarding osteoporosis and its prevention among menopausal women.

H_2- There will be significant association between the knowledge of menopausal women regarding osteoporosis and its preventions with their selected demographic variables such as age, marital status, education, religion, occupation, socio economic status, type of family, and Family history of osteoporosis.

ASSUMPTION:

1. Menopause women may have inadequate knowledge regarding the prevention of osteoporosis.
2. Video assisted teaching programme enhance the knowledge of menopausal women and helps for prevention of osteoporosis.
3. Demographic variables influence the knowledge regarding osteoporosis and its prevention among menopausal women.

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LIMITATIONS:

The proposed study is limited to

1. Menopausal women's who are residing in Selected areas at erode.

2. Sample size is limited to 60 only.

3. The study period is limited to 4-6 weeks only.

4. Women's between the age group of 45– 55years only

OPERATIONALDEFINATION:

ASSESS:

It refers to the estimate or judge the value, character, etc of

It refers to evaluating the level of knowledge regarding osteoporosis and its preventions among menopausal women.

EFFECTIVENESS:

It refers to having an intended or expected effect.

It refers to intended change occurs in the level of knowledge after video assisted teaching programme, regarding osteoporosis and its preventions among menopausal women.

VIDEO ASSISTED TEACHING PROGRAMME:

It is a structured systematic information, instruction, or training given to a person or a group with the help of video/visual media.

Instructions designed to provide information regarding osteoporosis and its prevention through video.

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KNOWLEDGE:

It is the information gained through experience on Education
Responses of the menopausal women regarding osteoporosis and its prevention.

OSTEOPOROSIS:

It is a condition of decreased bone density which cause bone fracture.

MENOPAUSE

The period of permanent cessation of menstruation, usually occurring between the ages of 45 and 55 years.

MENOPAUSAL WOMEN:

It refers to women in the age group of 45- 55years who attained menopause.

CONCEPTUAL FRAMEWORK

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Conceptual frameworks are inter-related concepts that assembled together in some rational scheme by virtue of their relevance to a common theme. Conceptual framework helps to stimulate research and the extension of knowledge by providing both direction and inputs**.**

(Polit and Hungler, 1999)

Conceptual framework is the precursor of a theory. It provides broad prospective for nursing practice, research and education. Conceptual framework plays several inter- related roles in the progress of science. Their overall purpose is to make scientific and meaningful findings and also to generalize the findings**.**

(Polit and Hungler, 1999)

The present study is focused on the effectiveness on the video assisted teaching programme regarding osteoporosis and its prevention among menopausal women. The study is based upon **J.W.Kenny's open system model**.The system's theory is concerned with changes due to interrelation between various factors in a situation. All living systems are open, in which there is a continual exchange of matter, energy and information. Open system have varying degrees of input and gives back output in form of matter, energy and information.

The concepts of Kenny‟s open system model are input, throughput, output and feedback. Input refers to matters and information, which are continuously processed through the system and released as outputs. After processing the input, the system returns output (matter and information) to the environment in as altered state, affecting the environment for information to guide its operation. This feedback information of environment responses to the systems output is used by the system in adjustment correlation with the environment. Feedback may be possible, negative or neutral. In this study the concepts have been modified as follows.

INPUT:-

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According to J.W. Kenny's input can be matter, energy and information from the environment. In the present study the input refers to assessment of the level of Knowledge regarding osteoporosis and its prevention among menopausal women

THROUGHPUT:-

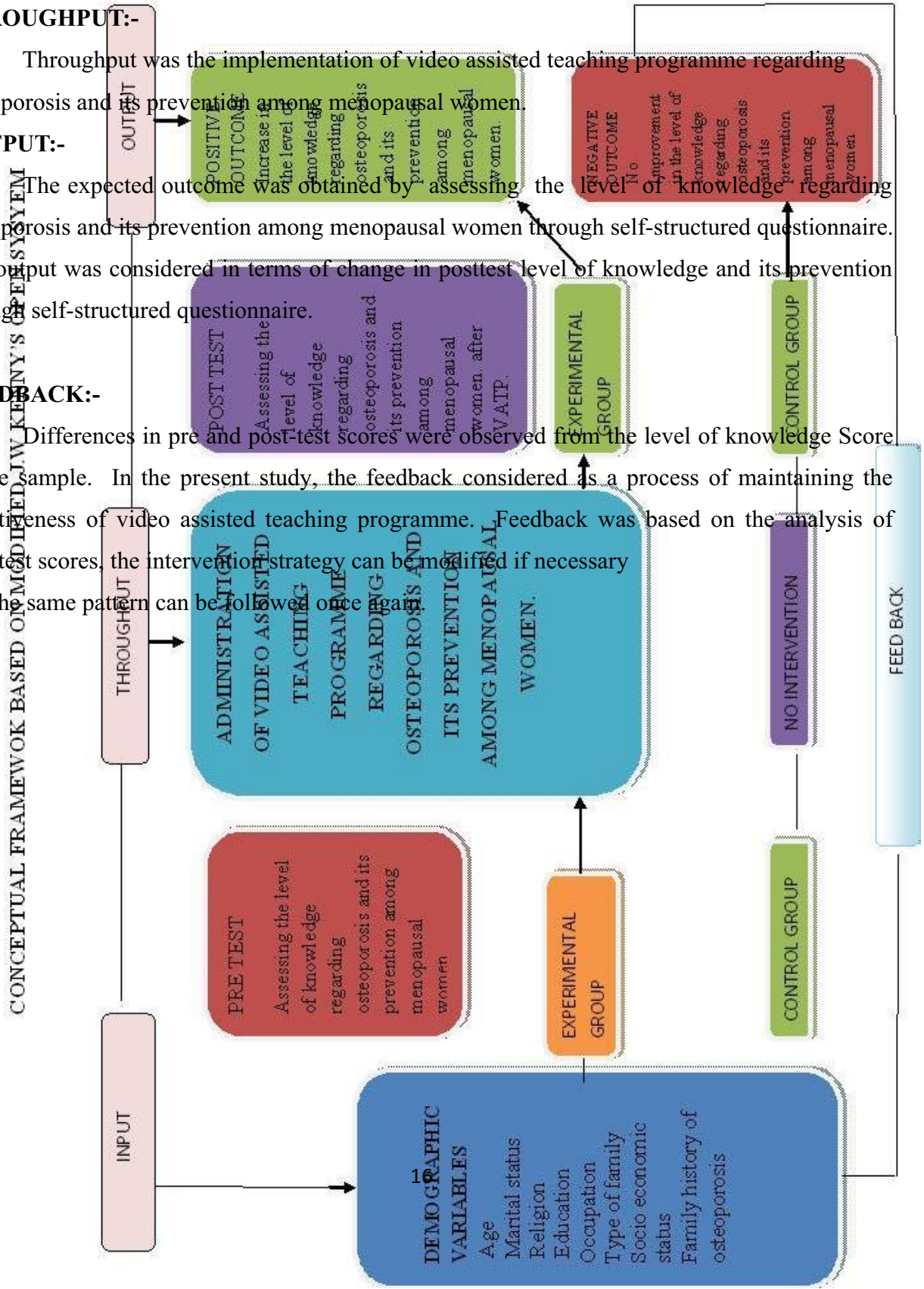
Throughput was the implementation of video assisted teaching programme regarding osteoporosis and its prevention among menopausal women.

OUTPUT:-

The expected outcome was obtained by assessing the level of knowledge regarding osteoporosis and its prevention among menopausal women through self-structured questionnaire. The output was considered in terms of change in posttest level of knowledge and its prevention through self-structured questionnaire.

FEEDBACK:-

Differences in pre and post-test scores were observed from the level of knowledge Score of the sample. In the present study, the feedback considered as a process of maintaining the effectiveness of video assisted teaching programme. Feedback was based on the analysis of post-test scores, the intervention strategy can be modified if necessary and the same pattern can be followed once again.



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CHAPTER - II

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REVIEW OF LITERATURE

A review of literature is a comprehensive description as well as an evaluation of the evidence related to a given topic. Review of literature sets the stage for the reminder of the article. An effective relevant literature includes those studies which have been completely executed, clearly reported and closely related to the research problem. Well-written reviews of literature include evaluative statements regarding the studies described.

According to **Polit (2008),** literature review refers to the activities involved in identifying and searching for information on a topic and developing in understanding of the state of knowledge on that topic.

According to **Basavanthappa (2010),** the review of literature is defined as a Broad comprehensive in depth, systematic and critical review of scholarly publications,unpublished scholarly materials, audiovisual materials and personal communication.

According to **Cooper, H. M. (1988),** "a literature review uses as its database reports of primary or original scholarship, and does not report new primary scholarship itself. The primary reports used in the literature may be verbal, but in the vast majority of cases reports are written documents. The types of scholarship may be empirical, theoretical,critical/analytic, or methodological in nature. Second a literature review seeks to describe,summarize, evaluate, clarify and/or integrate the content of primary reports."

The Review of literature in the present study is organized as follows:

- Literatures related to knowledge regarding osteoporosis among menopausal women.
- Literature related to prevention of osteoporosis among menopausal women.
- Literature related to video assisted teaching programme regarding osteoporosis and its prevention among menopausal women.

❖ **Literatures related to knowledge regarding osteoporosis among menopausal women**

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A shakil, and N.E gimpel (2010) conducted an quasi experimental study in two community centres in USA, to examine the awareness of osteoporosis prevention among pre and post-menopausal South Asian women. The researcher administered a baseline knowledge test, followed by a health education intervention and, 2 weeks later by a post-test. Participants received one point for each correct answer and scores were added (≤14).The result showed that a significant increase in osteoporosis knowledge post intervention (paired t 60 = −9.5, P < .01).The study concluded that the efficacy of educational intervention in improving osteoporosis awareness; and point to the potential for knowledge acquisition aimed at developing community-based prevention strategies at the community.

Ayfer Gemalma(2008) conducted a study in Department of family medicine Turkey, to evaluate the awareness, perception, sources of information, and knowledge of osteoporosis in a sample of rural Turkish women. The sample were 768 women mean age 40-75.The tool used were a structured questionnaire was administered by trained nurse. The result showed that awareness and accurate definition of osteoporosis was high in younger and high educated women ($p<0.001$). Television was themain source of knowledge with the rate of 55%, doctors and nurses/midwives were the second and third sources, respectively. Low calcium in diet and menopause were the first two risk factors chosen for osteoporosis. Knowledge about osteoporosis among rural Turkish women is low, and majority of women are un aware of the risk factors and consequences of osteoporosis. The study concluded that, appropriate educational programs should be planned according to community needs, and the target of these programs should be less educated and older women.

Ayfer Gemalmaz and Aysin Oge (2007) conducted a study on knowledge and awareness about osteoporosis and its related factors among rural Turkish women. The aim of this study is to evaluate the awareness, perception, sources of information, and knowledge of osteoporosis in a sample of rural Turkish women, to examine the factors related to their knowledge, and organize effective education programs. A total of 768 women mean age 53.6 ± 8.2 (40–70) were randomly selected and interviewed during their visits to primary care centers in three rural towns in West Anatolia. A structured questionnaire was administered by trained nurses. Chi-square test was performed in age and educational level groups for revealing factors influencing the awareness, perception, and knowledge sources of osteoporosis.

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One-way analysis of variance (ANOVA) analysis was carried out in calculating the difference of knowledge scores among groups. Of the women, 60.8% had heard of and 44.9% had the correct definition for osteoporosis. Awareness and accurate definition of osteoporosis was high in younger and high educated women ($p < 0.001$). Television was the main source of knowledge with the rate of 55%, doctors and nurses/midwives were the second and third sources, respectively. Osteoporosis knowledge was low with a mean score of 5.52 out of 20. Younger and more educated women had higher knowledge scores. Low calcium in diet and menopause were the first two risk factors chosen for osteoporosis. Knowledge about osteoporosis among rural Turkish women is low, and majority of women are unaware of the risk factors and consequences of osteoporosis. Therefore, appropriate educational programs should be planned according to community needs, and the target of these programs should be less educated and older women.

Tan s et al (2009) conducted a study to assess osteoporosis beliefs immigrant Chinese Women is China town, Chicago. In a community based health fair, osteoporosis knowledge and self efficacy among postmenopausal Chinese immigrants were assessed using the translated osteoporosis health belief scale the study population included 94 women with mean age of 51+/-9 years, mean length of residence in the United States of 9+1-7 years and 73% of whom were recent immigrants. The study concluded that Chinese immigrant women in Chicago exhibit low health motivation. Chinese women in China town lack necessary knowledge about osteoporosis to develop adequate self-efficacy.

Van Hurst PR,(2007) conducted an descriptive, web-based survey to investigate the knowledge and health beliefs regarding osteoporosis risk factors of New Zealand women aged 20-49 years. An opportunistic sample of 622 women aged between 20 and 49 years was recruited by e-mail. The results revealed that there was moderate level of knowledge about osteoporosis risk factors among women surveyed, with a mean total score for all subjects of 16.4 (standard deviation (SD) 4.0) out of a possible 26 correct responses. Mean scores for osteoporosis knowledge were statistically different by age group, with women aged 40-49 years scoring higher than those aged 30-39 years and 20-29 years (17.3±4.0, 16.4±3.9, respectively, P<0.001). Overall, about a third of the women perceived that they were likely to develop osteoporosis and 22% believed the disease to be potentially crippling. The study concluded that these women

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demonstrated average levels of knowledge about osteoporosis risk factors. They had low feelings of susceptibility towards development of osteoporosis, but most considered it to be a serious disease.

Saw SM et al(2003) conducted a population based survey to determine the awareness, knowledge of risk factor and attitudes toward osteoporosis in middle aged and elderly women in Singapore. women aged 45 years and above living in community on the western side of Singapore were randomly sampled and household interviews were conducted. There were 946 women who were postmenopausal & 430 who were not. 50% of sample had heard of osteoporosis. The study concluded that most women (79%) were concerned about developing osteoporosis but only 15.2% thought that osteoporosis was more serious than cancer. The study conclude that Community based health education programs on osteoporosis that target a wide audience including the less well educated, could be implemented. Increasing the awareness of osteoporosis and its risk factors may be essential in efforts to decrease the incidence of this disease.

Mattews, Laya & Dewitt (2006) conducted a study to explored the rural women's knowledge about osteoporosis through a survey of 437 women in rural Washington and Oregon. The response rate was 93% (N=406). The mean age of the respondents were 63 years and 74% (n=301) of women were postmenopausal. 27% of women above 40 years (n=111) reported to have fracture as an adult, less than half of this group (42%, n=47) considered themselves at risk for osteoporosis. Of the 42% (n=171), only 18% (n=30) answered calcium and vitamin D questions correctly. Over half of the women in this group wanted more information about osteoporosis, most wanted it before 50 years, and health care providers were a preferred source.

Yu S, Huang YC (2003) conducted a community population-based cross-sectional study with a randomly-selected sample of 447 females aged 40 and over (M = 53.35 yrs). The purpose of this study was to explore the knowledge, attitude, and activity regarding osteoporosis of middle-aged and elderly women in Taipei, Taiwan, A questionnaire was used to collect data and was delivered by way of a face-to-face interview. The findings indicated that the mean score on a "knowledge" scale was 15.37 (SD = 11.37; total scores ranging from 0 to 44).These findings reveal that broader health educational programs and health services regarding osteoporosis are necessary for Taiwanese women.

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Hollie L. Mathews, Mary Laya, Dawn E (2006) conducted a study to explore what women from high-prevalence rural communities know about osteoporosis & to assess their learning preferences and 437 women from rural Washington participated. The response rate was 93% (N=406). The mean age of respondents was 63 years and 74% of women were postmenopausal. Of the 42% (n=171) who rated their knowledge of osteoporosis good, only 18% (n=30) answered Ca & Vit D questions correctly. Over half of the women in this study wanted more information about osteoporosis. The study concluded that most women wanted to learn more about osteoporosis.

Pande, Tripathi, Kanoi, Thakur & Patle (2005) conducted a study to assess the knowledge about osteoporosis among learned Indian women. The sample included a total of 75 female staff members (average age 44.7years) of a teaching institute. An Osteoporosis Questionnaire was administered. The mean +/- SD of total score for the sample was 4.1 +/ - 4.1 (range – 8 to 15: maximum possible score 20). The study concluded with the findings that there was a general lack of awareness in all the areas assessed and there was a statistically significant difference in the total score depending on the faculty of education, with staff members from the science faculty having the maximum mean score ($p < 0.05$).

Patil SS,and Hasamnis AA, (2011) conducted an exploratory cross-sectional study on awareness regarding osteoporosis in postmenopausal women attending an urban health centre in Mumbai. The data were collected from women aged ≥ 40 years. The results revealed that 51% of women correctly identified osteoporosis as a condition characterized by fragile bones and 37.9% were aware that osteoporosis and osteoarthritis were different conditions with few similarities. However, only 16% (39) respondents were aware that our bones were strongest between the ages of 20 and 50 years. One-fourth of the women incorrectly believed that osteoporosis is more common in men than in women. Fifty percent (122) of patients had an incorrect impression about how common osteoporosis is in an elderly women compared to osteoarthritis and bone tumour. The study identified deficiencies in the knowledge about osteoporosis particularly regarding the risk factors, treatment and consequences amongst Indian women staying in urban slums.

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Neelam A, Ainharan R (2011) conducted a study on prevalence of osteoporosis and awareness, education, prevention and treatment of osteoporosis was conducted among 200 peri and post menopausal women in postgraduate institute of Medical education and Research, Chandigarh, India. The results revealed that the prevalence of low BMD (bone mineral density) was found in more than half of the population (53%). The mean age in group 1 (normal BMD) was found to be 50.56±5.74 year as compared to 52.50±5.94 in group II with low BMD (P=0.02). Strategies to identify and manage low BMD in the primary care setting need to be established. So there is need for developing awareness programme to manage low bone mineral density among postmenopausal women.

Indumathi V and Vidaya S(2007) conducted an cross-sectional study in Department of biochemistry, SDM college of medical science and hospital, Karnataka regarding hospital based preliminary study on osteoporosis in postmenopausal women. The objective of the study was done to evaluate the awareness of osteoporosis has grown worldwide in recent years and osteoporotic fractures are a common cause of morbidity and mortality in adult Indian men and women. The sample were 150 pre- and post-menopausal women consisted of 75 Pre-menopausal women in the age group of 25-45 years and 75 postmenopausal women in the age group of 46-65 years. The researchers compared, knowledge regarding bone formation markers (Total Calcium, Ionised calcium, Phosphorus, Alkaline phosphatase), and bone resorption markers(Urinary Hydroxyproline)were analysed in pre and post-menopausal women. The results of this study shows lack of awareness about osteoporosis among post-menopausal women.

Mehmet U A conducted a study to determine Turkish women's knowledge and attitudes in osteoporosis and its prevention. A total of 311 women were asked to fill in a questionnaire about osteoporosis. The study results shows nearly 90% of the women surveyed thought they were somewhat familiar with osteoporosis. However, >65% were unaware that the disease is directly responsible for disabling hip fractures, and >40% were unable to identify significant risk factors. Only 36% of the respondents could correctly identify the calcium-rich foods among the choices. According to our survey, a considerable number of the women are unaware about preventive measures of osteoporosis. The results recommended to improve the aware of rural women regarding prevention of osteoporosis

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Paiva-Costa L, Gomes CD (2011) conducted an cross-sectional study to assess knowledge about osteoporosis in postmenopausal women with osteoporosis or osteopenia undergoing antiresorptive treatment. A sample of 232 postmenopausal women with osteopenia or osteoporosis diagnosed by bone density studies and seen at the menopause outpatient clinic at Caism/ Unicamp was taken. Knowledge was assessed by means of the OPQ (osteoporosis questionnaire), a 20-item questionnaire about osteoporosis in areas of general information, risk factors, consequences and treatment. The results revealed that the average age of women was 61.6±8.2 years and the average time since menopause was 16.8 years. The average knowledge score obtained by the OPQ was 3.78. The average score for correct answers was 9.8 points, while the average score for incorrect answers was 6 points and 'don't know' answers was 4.1 points. Bivariate analysis showed the variables most closely associated with greater knowledge: education ($p<0.01$), reading ($p<0.02$), socioeconomic status ($p<0.03$), means of acquiring osteoporosis medication ($p<0.02$), and absence of comorbidities ($p<0.03$), means of acquiring osteoporosis medication ($p<0.04$). On multiple regression of analysis, the factors which remained associated with better knowledge were higher education, higher socioeconomic status scores and absence of comorbidities. The study thus revealed that knowledge of osteoporosis in postmenopausal women diagnosed with the disease was limited. Level of education was a strong predictor of knowledge.

- **Literature related to prevention of Osteoporosis among menopausal women**

Gregg EW, Cauley JA (2010) conducted a cohort study in, University of Vermont College of Medicine, USA. The objective was to determine whether higher levels of physical activity are related to lower incidence of hip, wrist, and vertebral fractures. The sample were 9704 non black women 65 years of age or older. The tool used for assessing the physical activity was questionnaire. The result showed that higher levels of leisure time, sport activity, and household activities, fewer hours of sitting daily were associated with a significantly reduced relative risk for hip fracture, after adjust for age, dietary factors, falls at baseline, and functional and health status. Very active women (fourth and fifth quintiles) had a statistically significant 36% reduction in hip fractures compared with the least active women (lowest quintile).The study concluded that total physical activity, hours of household activities per day, and hours of sitting per day were significantly associated with wrist or vertebral fractures.

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Murphy S, Khauk T (1994) conducted an cross sectional study in clinical gerontology unit, adden brookes hospital, Cambridge .The objective of the study was to examine the effects of historical milk consumption on current bone mineral density at the hip and spine. The sample were 284 community based women aged 44-74 years. Based on their average milk consumption up to age 25, from age 25-44, and from age 44 to the present time as , 1 glass/day, <1 glass/day but >1 glass/week, or <1 glass/week. The result showed that milk consumption up to age 25 was a significant independent predictor of bone mineral density at all sites in multiple linear regression analyses controlling for age, body mass index, menopausal status, smoking, ever use of hormone replacement therapy or oral contraceptives, physical activity, and alcohol intake.The effects of milk consumption from age 25-44 and from age 44 to the present were similar in direction though not statistically significant. The study concluded that frequent milk consumption before age 25 favourably influences hip bone mass in middle aged and older women.

Jalal Hejazi, Javad Mohtadinia (2009) conducted a cross sectional study to determine the nutritional status among 97 osteoporotic postmenopausal women was conducted in North West of Iran and compared the intake of several nutrients in terms of bone health. The study results revealed that the mean t- score for bone mineral density of lumbar spine, femoral neck and total hip were -3.15±0.73, -1.93±0.86 and 1.92±0.88 respectively. The percentages of participants receiving adequate intake of calcium, vitamin D and vitamin K were 7.2%, 3.1% and 42.3% respectively. The study was concluded that there is considerable deficiency in terms of energy and some micronutrients such as calcium, vitamin D, magnesium, which can be deleterious for bone health among postmenopausal osteoporotic women. So there is need for understanding of the influence of nutrition on bone health is important.

Pouilles J.M, Tremollieres F (2009) conducted an observational study to investigate the effect of menopause on femoral and vertebral bone loss was conducted among 81 healthy postmenopausal women (45-65 years of age) in France. The study results revealed that at each skeletal site, the rate of bone loss was significantly different($p<0.05$) and twice as high in women who were between six months and two year postmenopausal at enrollment than in those who were beyond five years of menopause. A poor correlation($r=0.39-0.42$, $p<0.001$) was found between the rate of vertebral and that of femoral postmenopausal bone loss. This study

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demonstrates that menopause is associated with a rapid and transient bone loss in BMD of the proximal femur, which declines with time after three years. There is need to initiate the therapy as early as possible after menopause to prevent bone loss.

Kumar A, Mittal S (2010) conducted a cross sectional study to assess the impact of dietary intake, education, and physical activity on bone mineral density among North Indian women. Subjects included 255 healthy women aged 20-69 years, who were relatives of patients being admitted in the hospital. The results revealed that daily intakes of energy (1563.4±267.2 kcal) and protein (48.7±8.7 g) were below the recommended dietary allowance. Daily dietary energy, protein, and calcium intakes were correlated with BMD at the lumbar spine. Stepwise multiple linear regression analyses showed that age, BMI, and physical activity were significant predictors for BMD at all sites. In addition, energy intake was also a predictor for BMD at the lumbar spine. Protein intake was associated with BMD at the spine (P = 0.02 and beta = 0.163) even after making adjustments for energy intake. The study proved that dietary pattern coupled with higher education levels and greater physical activity favoured bone health.

Sharma s, Tandon VR, Mahajan (2006) conducted an study in Department of Obstetrics and Gynecology, Gov. Medical College, Jammu and Kashmir regarding Preliminary screening of osteoporosis and osteopenia in urban women from Jammu. The objective of the study was to assess the substantial morbidity and socio-economic burden. The tool used were T-scores utilizing calcaneal QUS. The samples were 158 women admitted in hospital. The result suggested that a substantial female population had osteopenia and osteoporosis after the age of 45 years. The incidence of osteoporosis was (20.25%) and osteopenia (36.79%) with maximum number of both osteoporosis and osteopenia women recorded in the age group of (55-64 years). After the age of 65 years, there was an almost 100% incidence of either osteopenia or osteoporosis, indicating that it increases with age and in postmenopausal period. The study concluded that religion, caste and diet had an influence on the outcome of osteopenia and osteoporosis score in present study.

(Indian journal of medical science)

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- **Literature related to video assisted teaching programme regarding osteoporosis and its prevention among menopausal women**

Gurukrushna Mohapatra, Dhaneswari Jena(2013) Conducted a study to assess the effectiveness of video-assisted teaching programme on knowledge of osteoporosis among perimenopausal women in urban slum area of Berhampur, Odisha, India. It was an interventional study carried out in the slum areas of Ankuli .Sample size was calculated as 369, and systematic random sampling was applied. A structured pretested and predesigned questionnaire was used as the study tool. Immediately after pretest with questionnaire, VATP was presented and the posttest conducted 7 days after using the same structured questionnaire. Both descriptive and inferential statistics applied on data analysis by using SPSS version 16.0. Paired t test was applied for pre- and posttest comparison. Confidence interval was also calculated based on standard error. the results shows that Majority (75%) were in the age group of 51–60 years; 42% revealed no formal education. Before administration of VATP, 48% knew that osteoporosis is a disorder of bone opined, which increased to 92% post-VATP. There was a statistically significant difference in the mean pretest and posttest scores in all aspects of knowledge on osteoporosis.the study conclude that the VATP is an effective mode of increasing the awareness on osteoporosis.

Shalmon S chopade, Shashikumar Jawadagi,(2014) conducted a study to assess the effectiveness of video assisted teaching programme on knowledge of Type I osteoporosis and its prevention among menopause women in selected PHC at Bijapur' .A pre-experimental design was used to find the effectiveness of VATP on type I osteoporosis among 100 menopause women between the age group of 40 - 70 years were included with convenient sampling technique. Data was collected by using demographic proforma and questionnaires through interview method. the results shows that area wise distribution of pre test knowledge scores on type I osteoporosis and its prevention. The respondents had inadequate knowledge scores in all the areas. Whereas post test knowledge scores were adequate in the area of General information with mean ± SD as (92.4%, 4.62 ± 5.2) and Causes and risk factors (78%, 3.12 ± 0.58). And moderately adequate knowledge scores in the area of Prevention (71.67%, 4.30 ± 1.05), Clinical manifestation and diagnosis (70.50%, 4.23 ± 0.96), Management (59.50%, 3.57 ± 1.29) respectively. The computed't' values (25.65) between the mean of pre test and post test was

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more than the critical‘t’ value at a level of significance of 0.05%. the study concluded that hence its emerging need of the day to educate all the menopause women about osteoporosis and its prevention to gain good life.

Nisha M Varghese,Vinay Kumari, Mercy Madanlal(2009) conducted a study to assess the effectiveness of video assisted teaching programme on knowledge, Attitude and Expressed practices of working women regarding prevention of osteoporosis. Quasi experimental non-equivalent control group pretest posttest design was used. The study was conducted at selected institutions of MM University, Mullana, Haryana. 100 female teaching faculties were selected using convenience sampling. Structured knowledge questionnaire, attitude scale and expressed practices scale was used to assess the knowledge, attitude and expressed practices of working women regarding prevention of osteoporosis. Descriptive and inferential statistics were used to analyze the data. The findings of the study indicated that the mean post test knowledge, attitude and expressed practice score of working women(29.44±3.52,100.16±6.78,52.20±4.3) in experimental group was significantly higher than the mean post test knowledge, attitude and expressed practice score (17.48±4.47, 84.10±5.85, 46.14±7.48) in comparison group. Positive significant relationship (r=0.59) was found between post test knowledge and attitude of working women in experimental group. A significant association was found between level of pos test knowledge with religion (t=7.55), post test attitude with religion (t=10.04) and source of knowledge (t=5.25) in experimental group. teaching programme is an effective strategy in enhancing knowledge, developing favourable attitude, and improving practices of working women regarding prevention of osteoporosis.

Gipsy Sara Ninan1, Selvakani Pandian(2015) conducted a study to determine the effectiveness of Video Assisted Teaching Programme on knowledge and health beliefs regarding Osteoporosis among women in SRM General Hospital and Research Centre, kanjipuram tamilnadu. 60 women (30 in study and 30 in control group) between the age group 30-50 years selected through non probability convenient sampling technique, the researcher adopted quasi experimental pre-test - post-test control group design for the study where the pre and post-test level of knowledge and health beliefs were assessed with self-administered structured knowledge questionnaire and Osteoporosis Health Belief Scale. The result shows that women between the

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age group 30-50 years had inadequate knowledge and poor health beliefs regarding Osteoporosis. The mean post-test knowledge and health beliefs score were higher than mean pre-test knowledge and health beliefs score, hence Video Assisted Teaching was found to be effective in improving the knowledge of women by 39.5% and health beliefs by 25.7%. Also a moderate positive correlation was found between the level of knowledge and health beliefs of women regarding osteoporosis. the study recommended that Since India is one of the leading countries for Osteoporosis, it is very important to educate all the women between 30-50 years so as to reduce acute and late complications related to Osteoporosis.

CHAPTER- III

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RESEARCH METHODOLOGY

Methodology of a research refers to the ways of obtaining, organizing data, methodological studies address in the development validation and evaluation of research tools or methods. **Polit and beck(2004)**

This chapter deals with research approach ,research design, settings, population, sample, sample technique, criteria for sample selection, development and description of the tool, validity, reliability, data collection procedure and plan for data analysis.

RESEARCH APPROACH:

"The strength of the true experiment over other methods lies in the fact that the experimenter can achieve greater confidence in the genuineness and interpretability of relationships because they are observed under carefully controlled conditions."

[**Polit and Hungler, 1999]**

An educative approach was considered as an appropriate research approach to evaluate the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women.

- ✓ In this study Quantitative educative and Evaluative approach used.

RESEARCH DESIGN:

It is the overall plan for addressing a research questions including specifications for enhancing the integrity of the study.

Polit and beck (2008)

The research design used for the present study was pre-test and post-test control group design which is a **Quasi experimental design** used to measure the effectiveness of the video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women

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The Quasi experimental design lacks at least one of the properties that characterize true experiments randomization, control group and manipulation.

(Polit and Hungler, 2004)

This study had control group, experimental group and manipulation without randomization. In this design the experimental group received the intervention strategy, but the control group did not receive the intervention strategy.

The research design used in the study was **Non equivalent control group before-after design** to determine the effectiveness of intervention strategy.

Diagrammatic representation of the design is given below.

[Nancy Burns, 2013]

Experimental group	O_1	X	O_2
Control group	O_1	_	O_2

KEY:
O1 – Assessment of knowledge regarding osteoporosis and its prevention among menopausal women, before video assisted teaching programme.
X – Video assisted teaching programme on osteoporosis and its prevention among menopausal women.
O2 – Assessment of knowledge regarding osteoporosis and its prevention among menopausal women, after video assisted teaching programme.

VARIABLES

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A variable, as the name implies, is something that varies. A variable is any quality of an organism, group or situation that takes on different values. Variability in the dependent variable is presumed to depend on variability in the independent variable.

[Polit and Hungler, 2004]

INDEPENDENTVARIABLE:

Video assisted teaching programme regarding osteoporosis and its prevention.

DEPENDENTVARIABLE:

Knowledge regarding osteoporosis and its prevention among menopausal women.

SETTING OF THE STUDY

The selection of an appropriate setting is important because the setting can influence the way people behave, feel and how they respond. "The researcher needs to decide where the intervention will be implemented and where the data will be collected."

[Polit and Hungler, 2002]

- ✓ The study was conducted at pudhucolony and karaparai rural area at Erode.

POPULATION

Population is the entire set of individuals or objects having some common characteristics selected for a research study.

Populations are two types: Target population and Accessible population.

[Suresh K. Sharma, 2011]

- ➢ Menopausal women residing at Erode district.

SAMPLE

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A sample consists of the subset of the population selected to participate in the research study. Sample size is the number of people participating in the study. The sample size is determined based on the type of the study, variable being studied, the statistical significance required, and availability of samples and feasibility of conducting the study.

[Polit and Beck, 2004]

- The sample for this study was menopausal women who fulfilled the inclusion criteria residing at pudhucolony and karaparai rural area at Erode.

SAMPLE SIZE

- A total of 60 samples were selected, among them 30 samples from pudhucolony were in experimental group and 30 samples from karaparai were in control group respectively.

SAMPLING TECHNIQUE

Sampling is the process of selecting a portion of the population who represent the entire population.

Polit and beck-2001

- ✓ Non randomized Purposive sampling technique was used.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA:

- Women in the age group of 45 -55 years.
- Menopause women only.
- who are willing to participate in the study.
- Those who are available during the time of data collection.

EXCLUTION CRITERIA:

1. Menopausal women who diagnosed of osteoporosis.
2. Those who are deaf and dump.
3. Those who are critically ill.

SELECTION OF THE RESEARCH INSTRUMENT

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Research instruments or tools are ways of gathering data. Without them data would be impossible to put in hand which is used by the researcher to observe or measure the key variables in the research problem. The major task of the researcher is to construct instruments most accurately.

The instrument used in the research is a self-structured questionnaire.

DATA COLLECTION METHOD

Interview method was used.

DATA COLLECTION INSTRUMENT

The instrument was structured by the investigator based on the objectives of the study, after reviewing the literature about osteoporosis and its prevention.

The following steps were carried out in construction of the tool

- A review of the research and non-research literature done in the areas related to Video assisted teaching programme on knowledge regarding osteoporosis and its prevention.
- Opinion of experts was sought to ascertain the clarity and appropriateness of the items
- Informal discussions were held with teaching staff and concerned experts. This helped to identify the items to be included.
- Professional experience of the researcher in community health nursing field helped in determining the areas to be included.

DISCRIPTION OF THE INSTRUMENT:

Data collection instrument used is a self structured questionnaire which has **two sections**:

Section –I Structured interview schedule for demographic profile

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A structured interview schedule was used to collect information regarding demographic data such as Age, marital status, education, religion, occupation, socio economic status, type of family. No score was given in this section and it was used for descriptive analysis.

Section- II – consists of self-structured questionnaires to assess the level of knowledge regarding osteoporosis and its prevention among menopausal women.

The tool consisted of 25 multiple choice questions to measure the level of knowledge of Osteoporosis and its prevention among menopausal women. All the items had four response options; 1 correct and 3 wrong answers. The correct answer was given a score of 1 and wrong answer was given a score of 0. The total possible score was 25.

SCORING INTERPRETATION:

Section-II

The interpretation of the total score was:

- Inadequate knowledge: less than 50%
- Moderately adequate knowledge: 50%-75%
- Adequate knowledge: greater than 75%

1-8	Inadequate knowledge
9-16	Moderately adequate knowledge
17-25	Adequate knowledge

TESTING OF THE TOOL:

CONTENT VALITITY:

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The instrument valid by the 5 experts in the field of nursing and medicine. The experts suggested addition, deletion of certain items and reorganization of questions, appropriate modifications were made and the tool was finalized.

RELIABILITY:

Reliability or research instruments defined as the extent to which the instrument has the results on repeated measure.

Polit and beck -2004

Demographic variables, self structured questionnaire on knowledge regarding osteoporosis and its prevention was tested by implementing the tool on 6 menopausal women who are residing in rangampalayam, erode. “Split half method”(spearman brown formula)is used to test the reliability of the tool and tool was found to be reliable (r = 0.969)

PILOTSTUDY:

According to **Polit and Beck**, Pilot study is a small 10% of sample for 6 patients done in preparation of a major study. Researcher can refine this study by doing it on a small group of people who have similar characteristics of the intended respondents; it helps the researcher to foresee the strength, weaknesses and problems that may be encountered during the actual study.

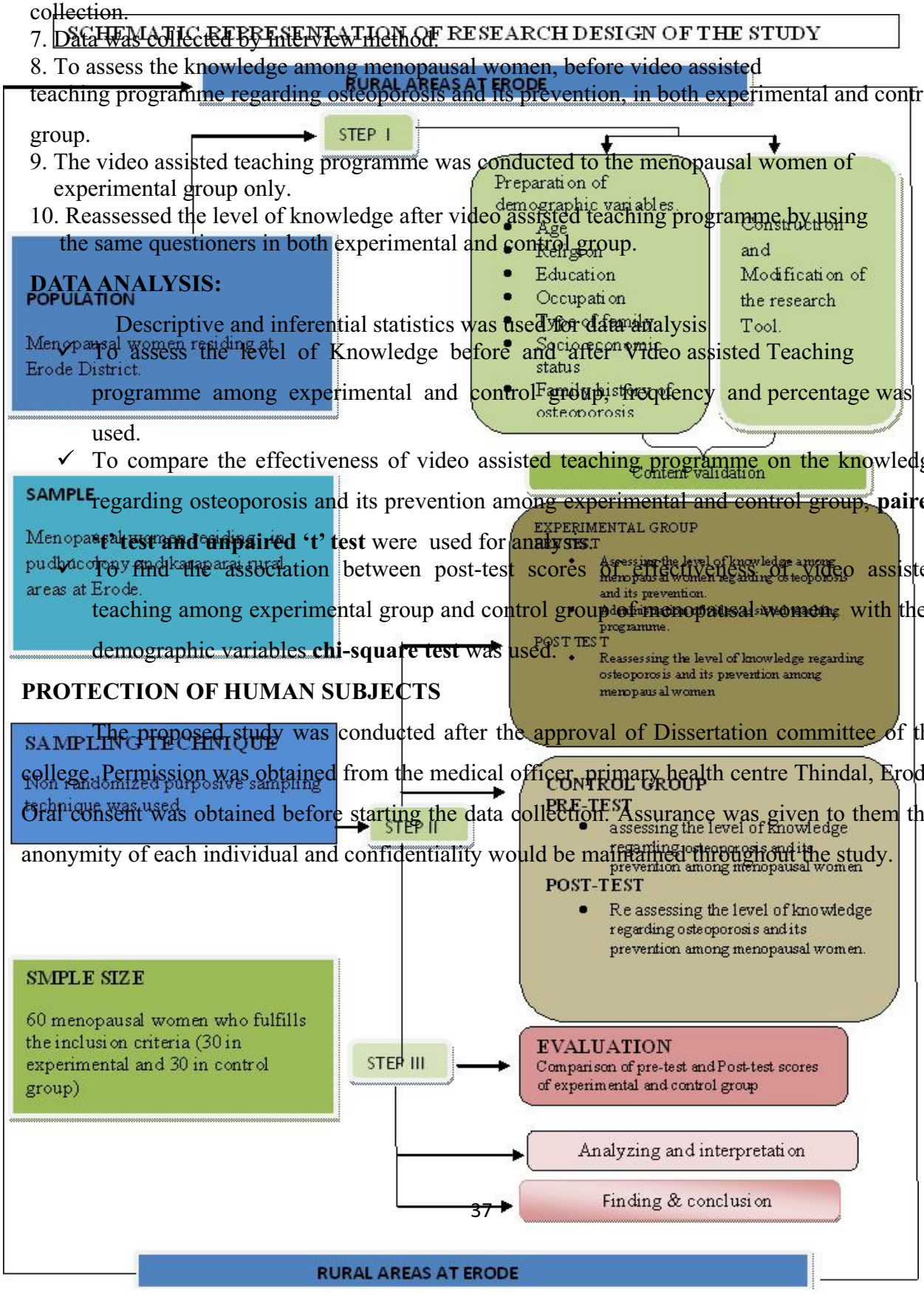
The pilot study the pilot study was conducted with 6 menopausal women who are residing in rangampalayam at Erode. According to the sampling criteria using purposive sampling method. Data was collected by self structured knowledge questionnaires. Privacy and confidential it was ensured. The study was found to be feasible in terms of availability of samples, cooperation of the people, time, distance, money and material. These samples were not included in the main study.

METHOD OF DATA COLLECTION

DATA COLLECTION PROCEDURE:

1. The study was conducted in pudhucolony and karaparai rural area at erode.
2. The period of data collection is 4 weeks.
3. Formal administrative, permission was obtained from the concerned authorities

4. The researcher introduced herself to the participants and established rapport with them.
5. The nature and purpose of the study was explained to the participants
6. Oral consent was obtained from the menopausal women in the study before the data collection.
7. Data was collected by interview method.
8. To assess the knowledge among menopausal women, before video assisted teaching programme regarding osteoporosis and its prevention, in both experimental and control group.
9. The video assisted teaching programme was conducted to the menopausal women of experimental group only.
10. Reassessed the level of knowledge after video assisted teaching programme by using the same questioners in both experimental and control group.



DATA ANALYSIS:

Descriptive and inferential statistics was used for data analysis

- ✓ To assess the level of Knowledge before and after Video assisted Teaching programme among experimental and control group, frequency and percentage was used.
- ✓ To compare the effectiveness of video assisted teaching programme on the knowledge regarding osteoporosis and its prevention among experimental and control group, **paired 't' test and unpaired 't' test** were used for analysis.
- ✓ To find the association between post-test scores of effectiveness of video assisted teaching among experimental group and control group of menopausal women, with their demographic variables **chi-square test** was used.

PROTECTION OF HUMAN SUBJECTS

The proposed study was conducted after the approval of Dissertation committee of the college. Permission was obtained from the medical officer, primary health centre Thindal, Erode. Oral consent was obtained before starting the data collection. Assurance was given to them that anonymity of each individual and confidentiality would be maintained throughout the study.

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CHAPTER- IV

DATA ANALYSIS AND INTERPRETATION

Analysis is a "process of organizing and synthesizing data in such a way that Research questions can be answered and hypothesis tested**.**

(Polit and Hungler, 2003)

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This chapter deals with the description of the analysis and interpretation of the data collected to evaluate effectiveness of Video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women.

The obtained data was analyzed, tabulated and interpreted by employing descriptive and inferential statistics.

SECTION – I: Findings related to sample characteristics of experimental and control group. The sample characteristics are described in terms of frequency and percentage.

SECTION – II: Assess pre-test and post-test score of knowledge regarding osteoporosis and its prevention in control and experimental group.
SECTION –III: Comparison of pre-test and post-test score of knowledge regarding osteoporosis and its prevention in control and experimental group.

SECTION –IV: Association between post-test score of knowledge regarding osteoporosis and its prevention in control and experimental group with selected demographic variables.

SECTION I

DESCRIPTION OF SELECTED DEMOGRAPHIC VARIABLES OF SAMPLE IN EXPERIMENTAL AND CONTROL GROUP

describes the distribution of subjects in control group and experimental group according to age, marital status , religion, , educational status, occupation, type of family, socio economic status, and family history of osteoporosis.

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Table1. Distribution of sample according to selected demographic variables (N=60)

S. No	Demographic Variables	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
		Freq	%	Freq	%
1.	**Age (in years)**				
a)	40-45 years	3	10%	4	13%
b)	46-50 years	15	50%	17	57%
c)	51-55 years	12	40%	9	30%
2.	**Marital status**				
a)	Married	29	97%	27	90%
b)	Unmarried	1	3%	0	0%
c)	Widow	0	0	3	10%
3.	**Religion**				
a)	Hindu	18	60%	21	70%
b)	Christian Muslim	1	3%	5	17%
C)	Others	11	37%	4	13%
d)		0	0	0	0
4.	**Educational status**				
a)	Illiterate	11	37%	13	43%
b)	Primary education	14	47%	11	37%
c)	Secondary education	4	13%	6	20%
d)	Undergraduate	1	3%	0	0%
5.	**Occupation**				
a)	homemaker	23	77%	18	60%
b)	working women	7	23%	12	40%
6.	**Type of family**				
a)	Nuclear family	16	53%	19	**63%**
b)	Joint family	14	47%	11	**37%**

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7.	**Socio economic status**				
a)	Low	9	30%	11	37%
b)	Middle High	21	70%	19	63%
c)		0	0%	0	0%
8.	**Family history of osteoporosis**				
a)	Yes	5	17%	4	13%
b)	No	25	83%	26	87%

The data given in **Table 1** shows that according to **age,** 15(50%) menopausal women were in the age group of 46-50 yrs, 12(40%) were in the age group of 51-55 years and 3(10%) were in the age group of 40-45years in experimental group. Whereas 17(57%) menopausal women were in the age group 46-50yrs, 9(30 %) were in the age group of 51-55 yrs and 4(10%) were in the age group of 40-45 yrs, in control group.

Regarding marital status 29 (97%) menopausal women were married and 1(3%) of the were unmarried, and none of them widow in experimental group. Whereas 27(90%) menopausal women were married and, 3(10) % were widow none of them unmarried in control group.

Regarding religion 18 menopausal women (60%) of them were Hindu, 11(37%) of them were Muslim and 1(3%) of them were Christian in experimental group. Whereas 21(70%) of them were Hindu, 5(17%) of them were Christian and 4(13%) of them were Muslim In control group. None of them in the others category in both experimental and control group.

With regard to **educational status** 14 menopausal women (47%) were had primary education, 11(37 %) were illiterate, 4(13%) had secondary education and 1(3%) had graduate in experimental group. Where as 13 menopausal (43%) of them illiterate, 11(37 %) had primary education, 6(20%) had secondary education and no one had graduate in control group .

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In connection with **occupation**, 23 menopausal women (77%) were homemaker and 7(23%) were working women in experimental group where as 18 menopausal women (60%) home maker and 12(40%) were working women in control group.

According to **Type of family**, 16 menopausal women (53%) of them belongs to nuclear family and 14 (47%) of them belongs to joint family, in experimental group where as 19menopausal women (63%) of them belongs to nuclear family and 11(37%) of them belongs to joint family in control group.

According to **socio economic status**, in 21 menopausal women (70%) were from middle economic status 9(30%) were from low economic status in experimental group where as 19 menopausal women (63 %) were from middle economic status and 11 (37 %) were from low economic status in control group and no one from high socio economic group in both experimental and control group.

According to **family history of osteoporosis,** 25 menopausal women (83%) had no family history of Osteoporosis and remaining 5(17 %) had an family history osteoporosis in experimental group where as 26menopausal women (87%) had no family history of osteoporosis and remaining 4 (13%) had an family history of osteoporosis in control group.

Table2. Distribution of sample in terms of age in experimental and control group (N=60)

Demographic Variables	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
	Freq	%	Freq	%
Age (in years)				
40-45 years	3	10%	4	13%
46-50 years	15	50%	17	57%
51-55 years	12	40%	9	30%

`

The data given in **Table 2,** shows that majority 15(50%)of the menopausal women in experimental group were between the age group of 46-50 yrs, 12(40%) were in the age group of 51-55 years and 3(10%) were in the age group of 40-45years Whereas majority 17(57%)of the menopausal women in control group were in between the age group 46-50yrs, 9(30)% were in the age group of 51-55 yrs and 4(13)% were in the age group of 40-45 yrs.

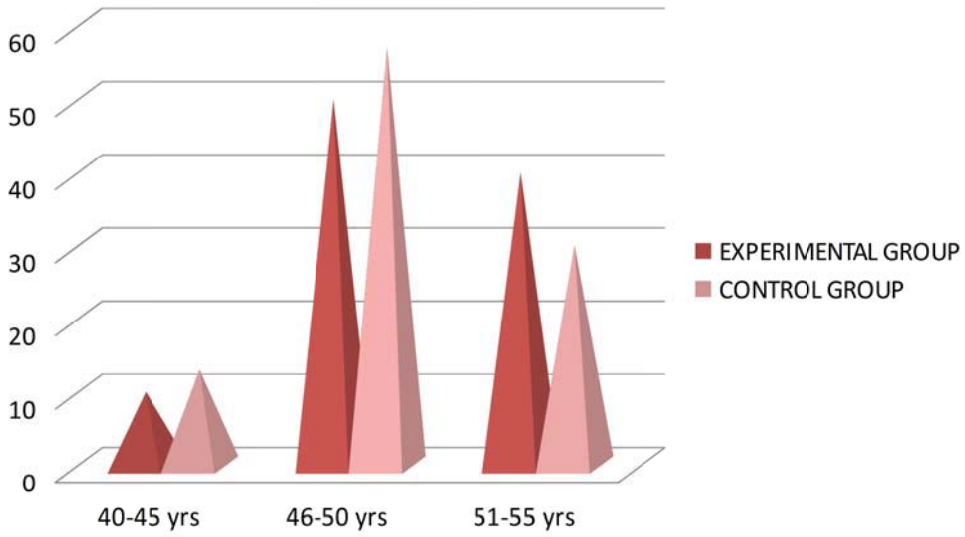

Figure3. Distribution of sample in terms of age in experimental and control group

Table 3 – Distribution of sample in terms of marital status.

Demographic Variables	**EXPERIMENTAL GROUP N= 30**		**CONTROL GROUP N= 30**	
Marital status	**Freq**	**%**	**Freq**	**%**
a) Married	29	97%	27	90%
b) Unmarried	1	3%	0	0%
c) Widow	0	0	3	10%

`

Table 3 –describes that according to marital status majority of menopausal women 29(97%) of them were married and 1(3%) of them were unmarried, none of them widow in experimental group and majority of menopausal women 27(90%) of them were married, 3(10%) of them widow and none of them were unmarried, in control group.

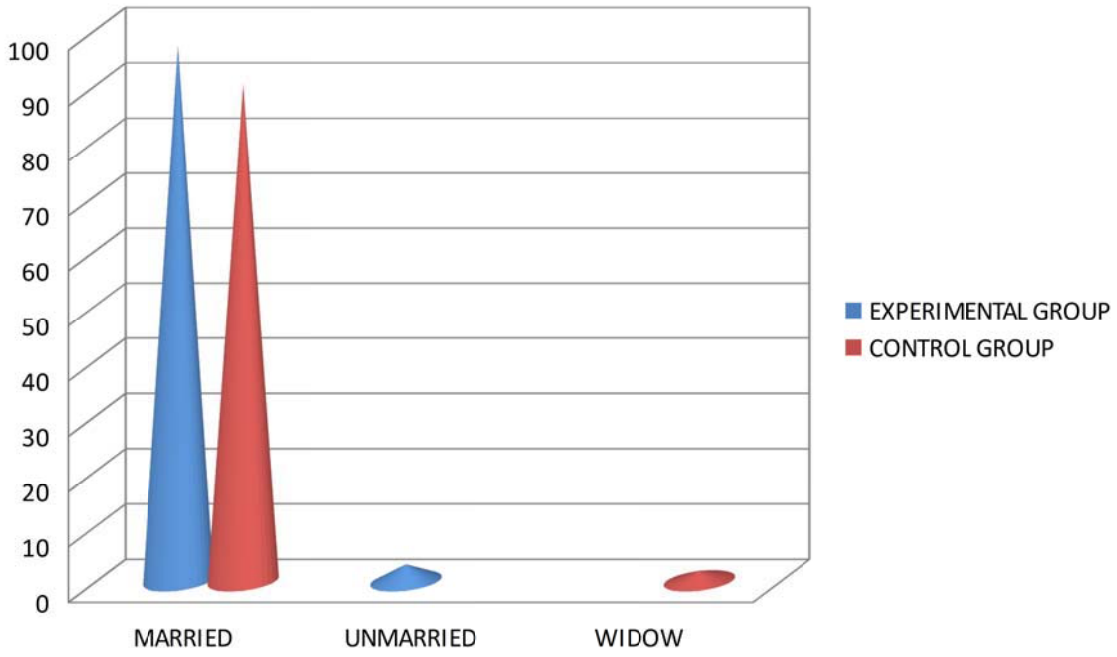

Figure 4 - Distribution of sample in terms of marital status

Table 4 - Distribution of sample in terms of Religion.

Demographic Variables	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
Religion	**Freq**	**%**	**Freq**	**%**
a) Hindu	18	60%	21	70%
b)Christian	1	3%	5	17%
c)) Muslim	11	37%	4	13%
d) Others	0	0%	0	0%

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Table-4-showes that majority of the menopausal women 18(60%) of them were Hindu, 1(3%) of them were Christian and 11(37%) of them were Muslim in experimental group. majority of the menopausal women 21(70%) of them were Hindu, 5(17%) of them were Christian and 4(13%) of them were Muslim In control group, none of them were in the others category in both experimental and control group.

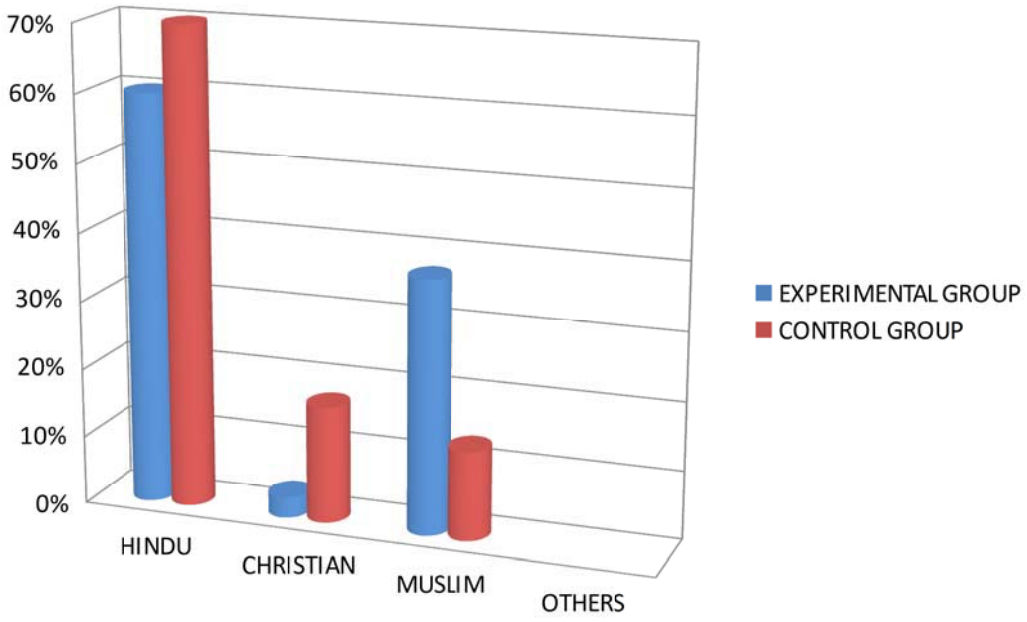

Figure 5 - Distribution of sample in terms of Religion.

Table 5. Distribution of sample in terms of education in experimental and control group

(N=60)

Demographic Variables	**EXPERIMENTAL GROUP N= 30**		**CONTROL GROUP N= 30**	
Educational status	**Freq**	**%**	**Freq**	**%**
a. Illiterate	11	37%	13	43%
b. Primary education	14	47%	11	37%
c. Secondary education	4	13%	6	20%
d. Undergraduate	1	3%	0	0%

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Table-5-showes that majority of menopausal women14(47%) were had Primary education,11(37%) were illiterate, 4(13%) had secondary education and 1(3%) had graduate in experimental group. Where us in control group majority of menopausal women 13(43%) were illiterate,11(37%) had primary education,6(20%) had secondary education and none of them had graduate .

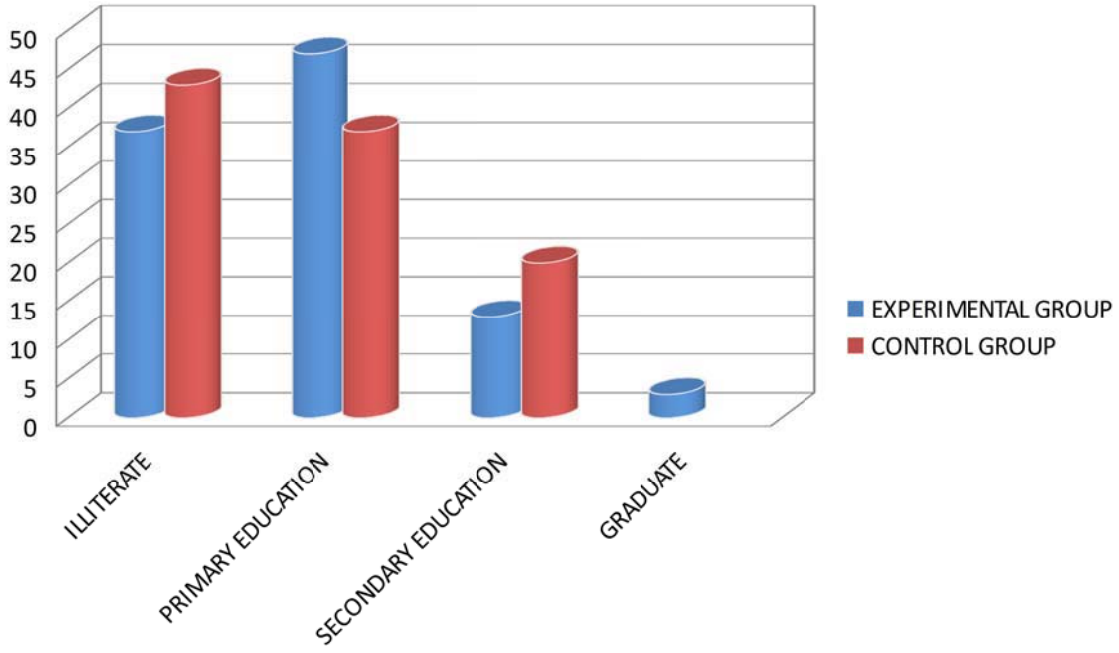

Figure 6. Distribution of sample in terms of education in experimental and control group

Table 6. Distribution of sample in terms of occupation in experimental and control group

(N=60)

Demographic Variables	**EXPERIMENTAL GROUP N= 30**		**CONTROL GROUP N= 30**	
Occupation	**Freq**	**%**	**Freq**	**%**
a) Homemaker	23	77%	18	60%
b) working women	7	23%	12	40%

`

Table-6-showes that, majority of menopausal women 23(77%) were home maker and 7(23%) were working women in experimental group. Where us the majority of menopausal women 18(60 %) home maker and 12(40%) were working women in control group.

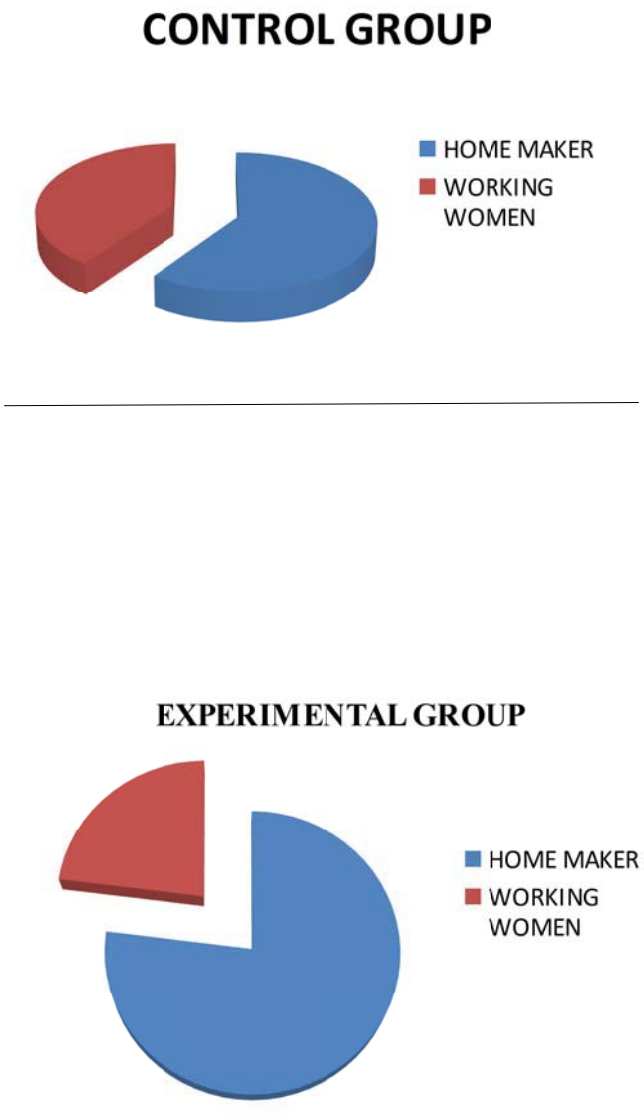

Figure 7.Distribution of sample in terms of occupation in experimental and control group

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Table 7. Distribution of sample in terms of type of family in experimental and control group

(N=60)

Demographic Variables	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
Type of family	**Freq**	**%**	**Freq**	**%**
a) Nuclear family	16	53%	19	**63%**
b)Joint family	14	47%	11	**37%**

Table-7-showes that, majority 16 (53%) were belongs to nuclear family and 14(47%) were belongs to joint family in experimental group. and majority of menopausal women 19(63%) were belongs to nuclear family and 11(37%) were belongs to joint family in control group.

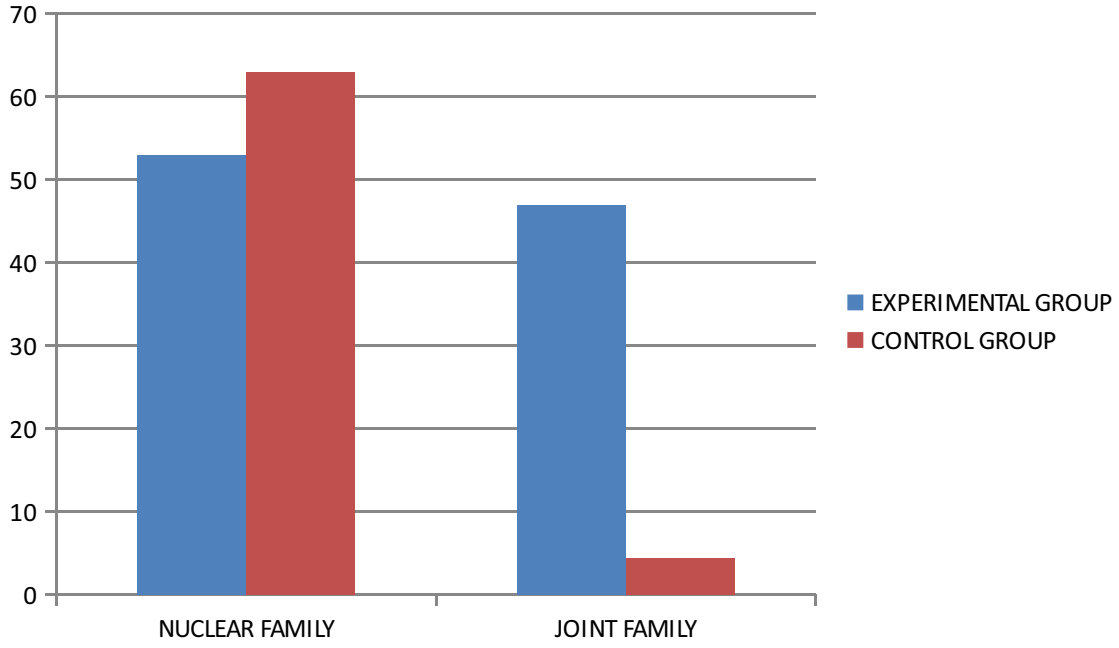

Figure 8. Distribution of sample in terms of type of family in experimental and control group

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Table 8. Distribution of sample in terms of socio economic status in experimental and control group

(N=60)

Demographic Variables	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
Socio economic status	**Freq**	**%**	**Freq**	**%**
a) low	9	30%	11	37%
b)middle	21	70%	19	63%
c)high	0	0%	0	0%

Table-8-showes that, majority of menopausal women 21(70%) were from middle economic status 9(30%) were from low economic status in experimental group where as majority 19 menopausal women (63 %) were from middle economic status and 11 (37 %) were from low economic status in control group and no one from high socio economic group in both experimental and control group.

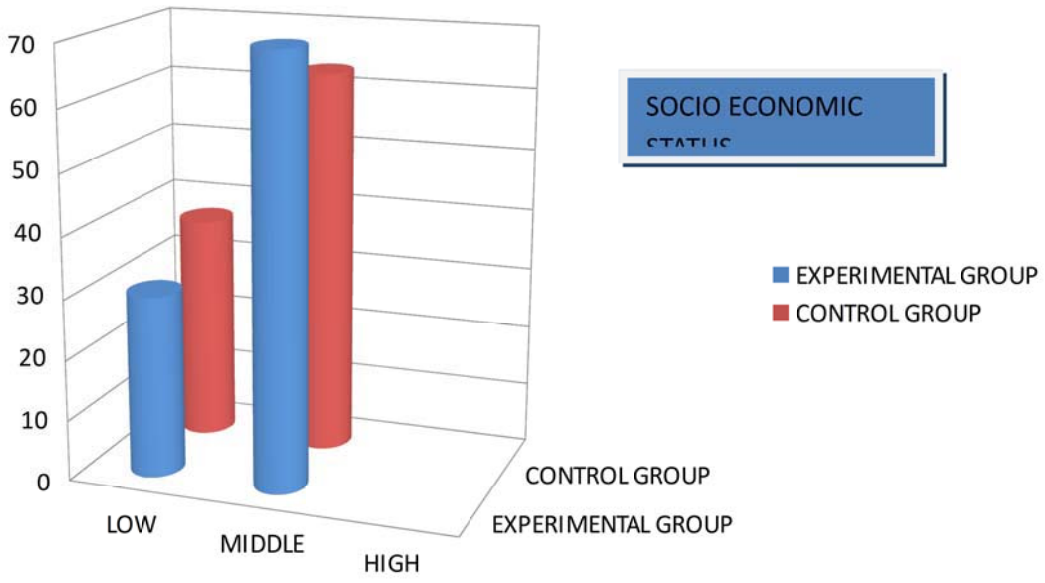

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Figure - 9. Distribution of sample in terms of socio economic status in experimental and control group

Table 9. Distribution of sample in terms of family history of osteoporosis in experimental and control group

(N=60)

Demographic Variables	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
family history of osteoporosis	**Freq**	**%**	**Freq**	**%**
a) Yes	5	17%	4	13%
b) No	25	83%	26	87%

Table-9- shows that majority of menopausal women25 (83%) had no family history of Osteoporosis and remaining 5(17 %) had an family history osteoporosis in experimental group where as majority of menopausal women 26 (87%) had no family history of osteoporosis and remaining 4 (18%) had an family history of osteoporosis in control group.

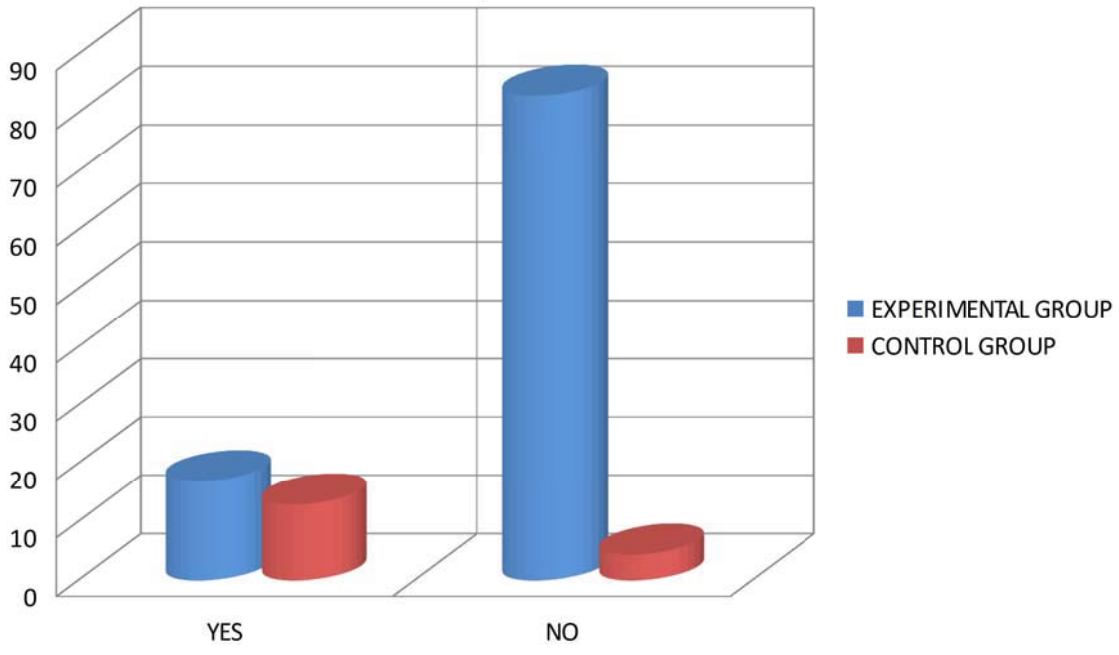

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Figure-10. Distribution of sample in terms of family history of osteoporosis in experimental and control group

SECTION – II

PRE-TEST AND POST-TEST SCORE OF KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION AMONG CONTROL AND EXPERIMENTAL GROUP

Table -10 Pre-test and post-test score of knowledge in control group (N=30)

LEVEL OF KNOWLEDGE REGARDING OSTEOPOROSIS	CONTROL GROUP			
	PRE-TEST SCORES		POST-TEST SCORES	
	Freq	%	Freq	%
Inadequate	20	67%	17	57%
Moderately adequate	10	33%	13	43%
Adequate	0	0%	0	0%

Table 10 - depicts the distribution of pre – test and post – test scores of knowledge in control group. In pre – test majority of menopausal women 20(67 %) had inadequate knowledge and 10(33%) moderately adequate knowledge, whereas in post – test 17(57%) of them had inadequate knowledge and 13(43%) moderately adequate knowledge and none of them have adequate knowledge in pre test and post test.

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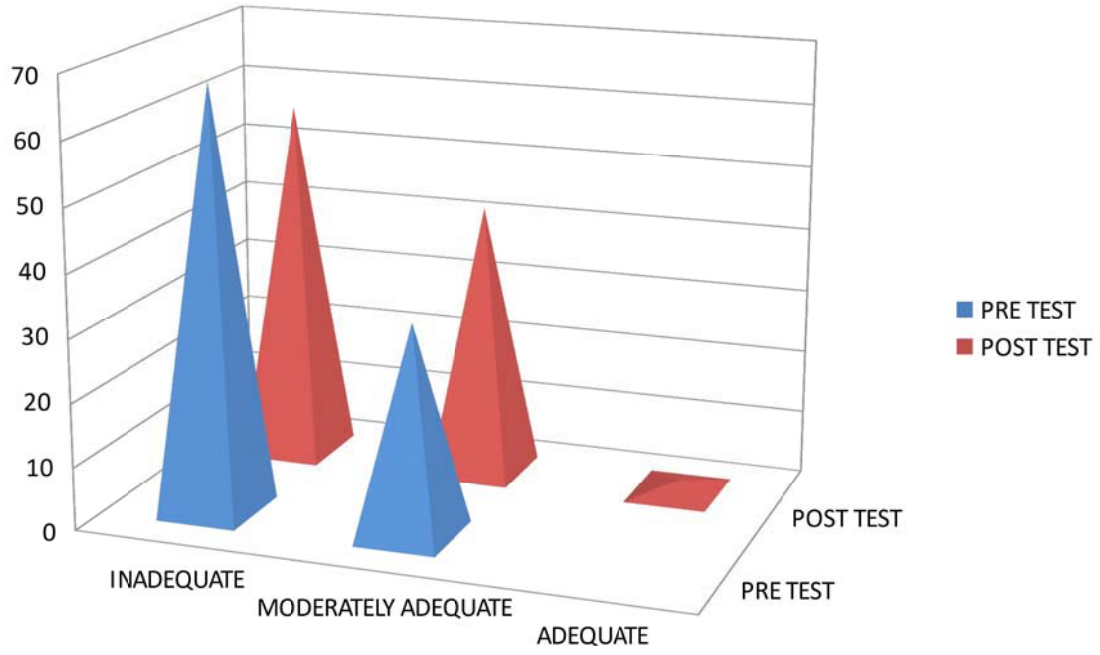

Figure-11 Pre-test and post-test score of knowledge in control group (N=30)

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Table -11 Pre-test and post-test score of knowledge in experimental group

(N=30)

LEVEL OF KNOWLEDGE REGARDING OSTEOPOROSIS	EXPERIMENTAL GROUP			
	PRE-TEST SCORES		POST-TEST SCORES	
	Freq	%	Freq	%
Inadequate	17	57%	0	0%
Moderately adequate	13	43%	10	33%
Adequate	0	0%	20	67%

Table 11- depicts the distribution of pre – test and post – test scores of knowledge in experimental group. In pre – test majority of Menopausal women 17(57%) had inadequate knowledge and 13(43%) of them had moderately adequate knowledge and none of them have adequate knowledge, whereas in post – test majority of menopausal women 20(67%) had moderately adequate knowledge and10(33%) of them had moderately adequate knowledge and none of them have inadequate knowledge.

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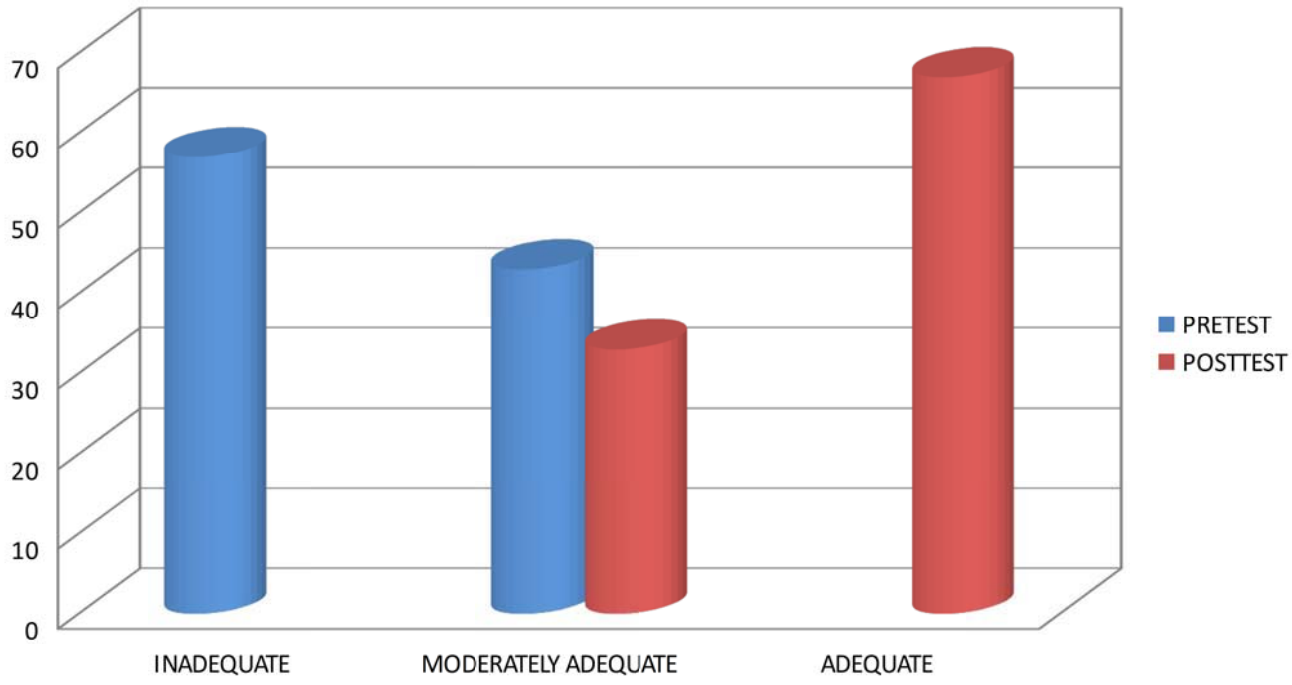

Figure-12 Pre-test and post-test score of knowledge in experimental group

SECTION –III

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COMPARISON OF PRE-TEST AND POST-TEST SCORE OF KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION IN CONTROL AND EXPERIMENTAL GROUP

The effectiveness of Video assisted teaching programme was tested by using paired 't'test and unpaired' test. Paired' test and unpaired't' test was calculated to analyze the difference in pre and post test scores of knowledge in control and experimental group.

Table-12 comparison of mean pre-test and mean post-test score of Knowledge in control Group (N=30)

COMPONENT	Observation	Mean	SD	Paired 't' value
CONTROL GROUP KNOWLEDGE SCORE	**Pre-test**	**7.23**	**2.76**	1.7
	Post-test	7.4	2.86	

NS- Not Significant at 0.05level

Table 12 shows that the comparison of pre – test and post – test scores of knowledge in control group. The mean pre – test score is 7.23 and mean post –test score is 7.4, the Paired 't' test value was 1.7 when compared to table value (2.02) is low. It seems that without video assisted teaching programme there is no significant difference between pre – test and post – test scores of knowledge in control group.

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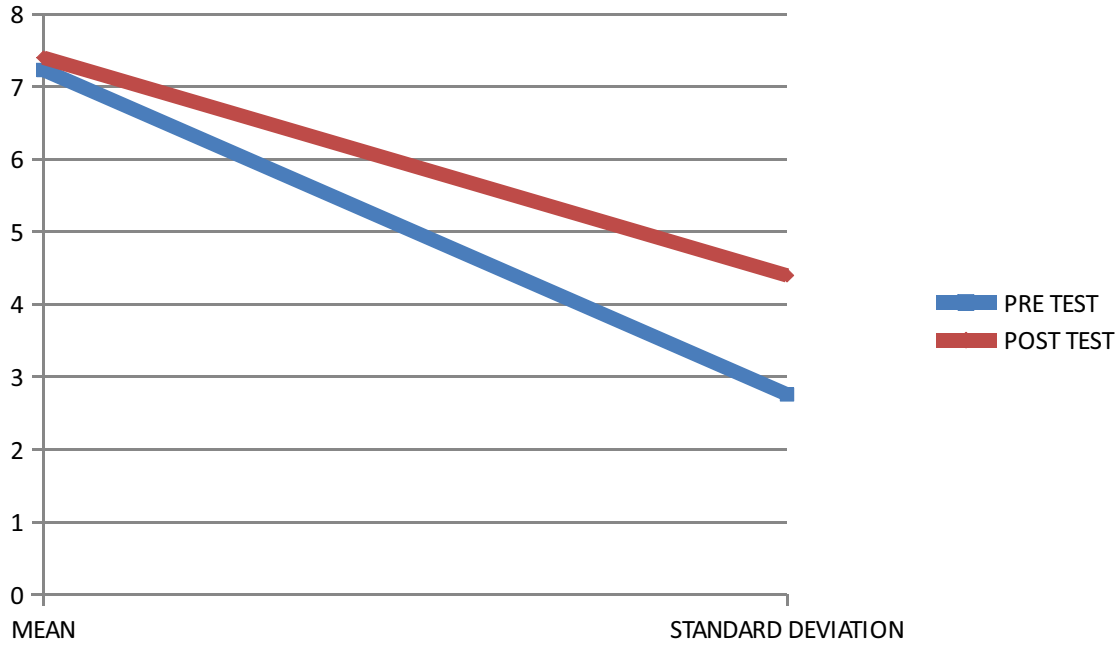

Figure-13 comparison of mean pre-test and mean post-test score of Knowledge in control Group

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Table -13 comparison of mean pre-test and mean post-test score of Knowledge in experimental group

(N=30)

COMPONENT	Observation	Mean	SD	Paired 't' value
EXPERIMENTAL GROUP KNOWLEDGE SCORE	**Pre-test**	**8.1**	**3.36**	10.11
	Post-test	17.9	4.11	

Significant at 0.05 level

Table 13 shows that the comparison of pre – test and post – test scores of knowledge in experimental group. The mean pre – test score is 8.1 and mean post – test score is 17.9. the Paired "t" test value was *10.11 when compared to table value (2.02) is high. It seems that Video assisted teaching programme makes significant difference between pre – test and post – test scores of knowledge in experimental group.

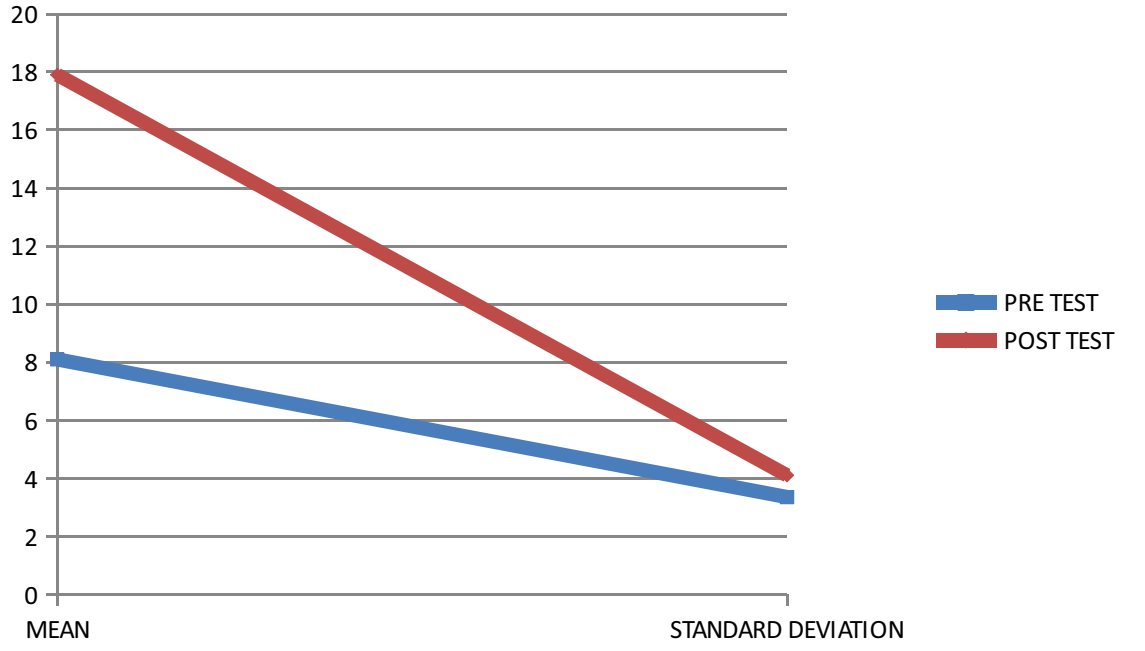

Figure-14 comparison of mean pre-test and mean post-test score of Knowledge in experimental group

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Table-14 Comparison of mean post-test score of knowledge in control group and experimental group

(N=60)

COMPONENT	**N**	**Mean**	**SD**	**Un -Paired 't' value**
Control Group	**30**	**7.4**	**2.86**	11.3
Experimental Group	30	17.9	4.11	

***significant at 0.05 level**

Table-14 shows calculation of unpaired 't' test to analyze the difference between the mean post-test score of knowledge in control and experimental group. The mean post-test value of control group was 7.4 which is lesser than the post-test value 17.9 of experimental group. The unpaired 't' value was *11.3 when compared to table value (2) is high. The findings show there is significant increase in the level of knowledge in experimental group than control group. It indicates the effectiveness of video assisted teaching programme in increasing knowledge level regarding osteoporosis and its prevention among menopausal women.

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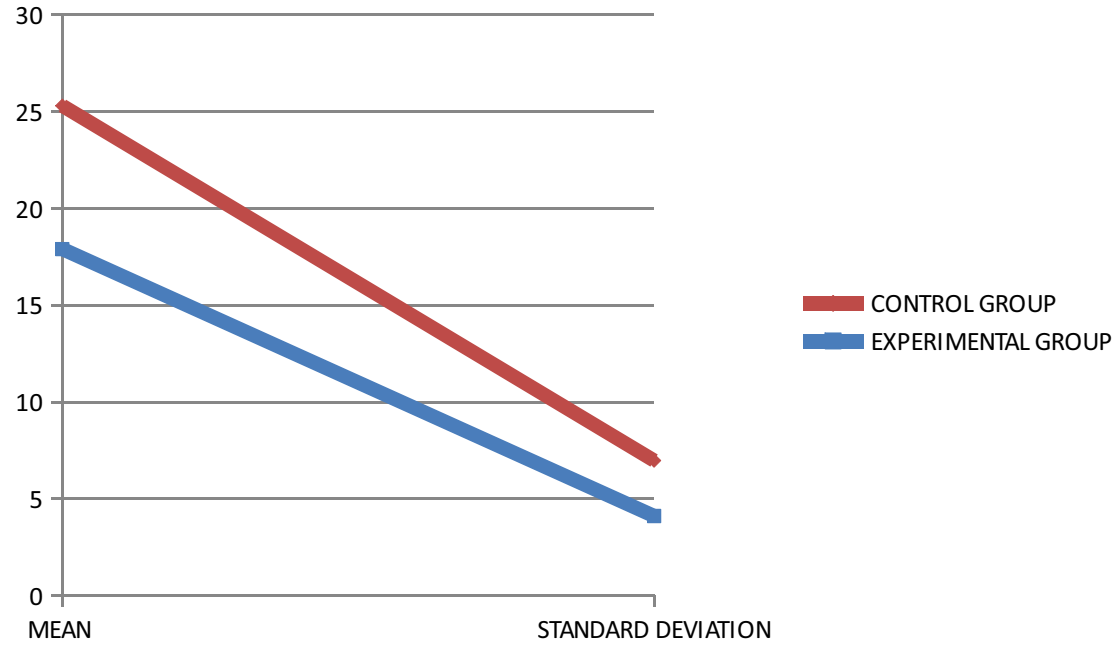

Figure-15 Comparison of mean post-test score of knowledge in control group and experimental group

SECTION – IV

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ASSOCIATION BETWEEN POST-TEST SCORE OF KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION IN CONTROL AND EXPERIMENTAL GROUP WITH DEMOGRAPHIC VARIABLES.

Table -1 5Associations between post-test scores of knowledge in control group with demographic variables

(N=30)

DEMOGRAPHIC VARIABLES	Freq	%	Df	χ 2	Table Value	LEVEL OF SIGNIFICANCE
AGE						
40-45 years	4	13%	**1**	**0.918**	**3.84**	P> 0.05 Not Significant
46-50 years	17	57%				
51-55 years	9	30%				
Marital status			**1**	**0.535**	**3.84**	P> 0.05 Not Significant
Married	**27**	**90%**				
Unmarried	**0**	**0%**				
Widow	**3**	**10%**				
Religion			**1**	**3.086**	**3.84**	P> 0.05 Not Significant
Hindu	**21**	**70%**				
Christian	**5**	**17%**				
Muslim	**4**	**13%**				
Others	**0**	**0%**				

`

Educational status			1	0.475	**3.84**	P> 0.05 Not significant
Illiterate	13	43%				
Primary education	11	37%				
Secondary Education	6	20%				
Undergraduate	0	0				
Occupation			1	0.200	**3.84**	P> 0.05 Not Significant
Homemaker	18	60%				
working women	12	40%				
Type of family			1	**2.624**	**3.84**	P> 0.05 Not Significant
Nuclear family	19	63%				
Joint family	11	37%				
Socio economic status			1	0.089	**3.84**	P> 0.05 Not Significant
Low	9	37%				
Middle	21	63%				
High	0	0				
Family history of osteoporosis			1	4.038	**3.84**	P< 0.05 Significant
Yes	4	13%				
No	26	87%				

Chi-square was calculated to find out the association between post-test score of knowledge with demographic variables. Table 15 shows that there was significant association between post test knowledge score of control group and family history of osteoporosis at (P<0.05) level.

Table-15 shows that there was no significant association found between the post-test knowledge score of control group with other demographic variables like age, marital status, education, occupation, type of family, and socio economic status at(p>0.05)

Table -16 Associations between post-test score of knowledge in Experimental group with demographic variables

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(N=30)

DEMOGRAPHIC VARIABLES	Freq	%	Df	χ 2	Table Value	LEVEL OF SIGNIFICANCE
AGE						
40-45 years	3	10%	**1**	**0.370**	**3.84**	P> 0.05 Not Significant
46-50 years	15	50%				
51-55 years	12	40%				
Marital status			**1**	**0.689**	**3.84**	P> 0.05 Not Significant
Married	**29**	**97%**				
Unmarried	**1**	**3%**				
Widow	**0**	**0%**				
Religion			**1**	**0.095**	**3.84**	P> 0.05 Not Significant
Hindu	**18**	**60%**				
Christian	**1**	**3%**				
Muslim	**11**	**37%**				
Educational status			1	0.361	**3.84**	P> 0.05 Not Significant
Illiterate	11	37%				
Primary education	14	47%				
Secondary Education	4	13%				
Undergraduate	1	3%				
Occupation			1	2.51	**3.84**	P> 0.05 Not Significant
Homemaker	23	77%				
working women	7	23%				

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Type of family			1	1.428	**3.84**	P> 0.05 Not Significant
Nuclear family	16	53%				
Joint family	14	47%				
Socio economic status			1	1.693	**3.84**	P> 0.05 Not Significant
Low	9	30%				
Middle	21	70%				
High	0	0				
Family history of osteoporosis			1	1.000	**3.84**	P> 0.05 Not Significant
Yes	5	17%				
No	25	83%				

Chi-square was calculated to find out the association between post-test score of knowledge with demographic variables.

Table-16shows that there was no significant association found between the post-test knowledge score of experimental group with demographic variables like age, marital status, education, occupation, type of family, socio economic status, and family history of osteoporosis at 0.05 level

CHAPTER–V
DISCUSSION

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This chapter deals with the discussion which was based on the findings obtained from the statistical analysis and its relation to the objectives of the study, the conceptual frame work and the related literature.

The aim of the study was to assess the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis among menopausal women.

Sample characteristics in control group and experimental group

The data given in **Table 1,** shows that according to **age,** 15(50%) menopausal women were in the age group of 46-50 yrs, 12(40%) were in the age group of 51-55 years and 3(10%) were in the age group of 40-45years in experimental group. Whereas 17(57%) menopausal women were in the age group 46-50yrs, 9(30 %) were in the age group of 51-55 yrs and 4(13%) were in the age group of 40-45 yrs, in control group.

Regarding marital status 29 (97%) menopausal women were married and 1(3%) of the were unmarried, and none of them widow in experimental group. Whereas 27(90%) menopausal women were married and, 3(10) % were widow none of them unmarried in control group.

Regarding religion 18 menopausal women (60%) of them were Hindu, 11(37%) of them were Muslim and 1(3%) of them were Christian in experimental group. Whereas 21(70%) of them were Hindu, 5(17%) of them were Christian and 4(13%) of them were Muslim In control group. None of them in the others category in both experimental and control group.

With regard to **educational status** 14 menopausal women (47%) were had primary education, 11(37 %) were illiterate, 4(13%) had secondary education and 1(3%) had graduate in experimental group. Where as 13 menopausal (43%) of them illiterate, 11(37 %) had primary education, 6(20%) had secondary education and no one had graduate in control group .

In connection with **occupation**, 23 menopausal women (77%) were homemaker and 7(23%) were working women in experimental group where as 18 menopausal women (60%) home maker and 12(40%) were working women in control group.

According to **Type of family**, 16 menopausal women (53%) of them belongs to nuclear family and 14 (47%) of them belongs to joint family, in experimental group where as

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19menopausal women (63%) of them belongs to nuclear family and 11(37%) of them belongs to joint family in control group.

According to **socio economic status**, in 21 menopausal women (70%) were from middle economic status 9(30%) were from low economic status in experimental group where as 19 menopausal women (63 %) were from middle economic status and 11 (37 %) were from low economic status in control group and none of them from high socio economic status in both experimental and control group.

According to **family history of osteoporosis,** 25 menopausal women (83%) had no family history of Osteoporosis and remaining 5(17 %) had an family history osteoporosis in experimental group where as 26menopausal women (87%) had no family history of osteoporosis and remaining 4 (13%) had an family history of osteoporosis in control group.

1. The first objective of the study was to assess the level of knowledge regarding osteoporosis and its prevention among menopausal women, before and after video assisted teaching programme.

This was analyzed by using frequency and percentage.

Table 10 - depicts the distribution of pre – test and post – test scores of knowledge in control group. In pre – test majority of menopausal women 20(67 %) had inadequate knowledge and 10(33%) moderately adequate knowledge, whereas in post – test 17(57%) of them had inadequate knowledge and 13(43%) moderately adequate knowledge and none of them have adequate knowledge in pre test and post test.

Table 11- depicts the distribution of pre – test and post – test scores of knowledge in experimental group. In pre – test majority of Menopausal women 17(57%) had inadequate knowledge and 13(43%) of them had moderately adequate knowledge and none of them have adequate knowledge, whereas in post – test majority of menopausal women 20(67%) had moderately adequate knowledge and10(33%) of them had moderately adequate knowledge and none of them have inadequate knowledge.

2. The second objective was to implement and evaluate the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women.

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The effectiveness of the **video assisted teaching programme** was tested by using paired 't' test and unpaired 't' test. Paired't' test and unpaired 't' test was calculated to analyze the difference in pre and post test score of knowledge in control and experimental group.

a. Comparison of mean pre-test and mean post-test score of knowledge in control group and experimental group.

Table 12 shows that the comparison of pre – test and post – test scores of knowledge in control group. The mean pre – test score is 7.23 and mean post –test score is 7.4, the Paired 't' test value was 1.7 when compared to table value (2.02) is low. It seems that without video assisted teaching programme there is no significant difference between pre – test and post – test scores of knowledge in control group.

Table 13 shows that the comparison of pre – test and post – test scores of knowledge in experimental group. The mean pre – test score is 8.1 and mean post – test score is 17.9. the Paired 't' test value was *10.11 when compared to table value (2.02) is high. It seems that Video assisted teaching programme makes significant difference between pre – test and post – test scores of knowledge in experimental group.

b. Comparison of mean post-test score knowledge of control group and experimental group

Table-14 shows calculation of unpaired t test to analyze the difference between the mean post-test score of knowledge in control and experimental group. The mean post-test value of control group was 7.4 which is lesser than the post- test value 17.9 of experimental group. The Unpaired t value was *11.3when Compared to table value (2.2) is high. The findings show there is significant increase in the level of knowledge in experimental group than control group. It indicates video assisted teaching programme is effective in increasing knowledge level regarding osteoporosis and its prevention among menopausal women.

3. The third objective was to find out the association between knowledge of menopausal women regarding osteoporosis and its prevention with selected demographic variables such as age, marital status, education, religion, occupation, socio economic status, type of family, and family history of osteoporosis.

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Chi-square was calculated to find out the association between post-test score of knowledge with demographic variables.

Chi-square was calculated to find out the association between post-test score of knowledge with demographic variables.

Table 15 shows that there was significant association between post test score of knowledge of control group and family history of osteoporosis at ($P<0.05$) level.

Table- 15 shows that there was no significant association found between the post-test score of knowledge of control group with other demographic variables like age, marital status, education, occupation, type of family, and socio economic status at($p<0.05$)

Chi-square was calculated to find out the association between post-test score of knowledge with demographic variables.

Table- 16 shows that There was no significant association found between the post-test score of knowledge of experimental group with demographic variables like age, marital status, education, occupation, type of family, socio economic status, and family history of osteoporosis at 0.05 level

CHAPTER - VI
SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

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This chapter deals with the summary of the study, its findings, conclusion and the implications for nursing administration, the health care delivery system(nursing practice), nursing education and nursing research. This study has been started with a few limitations and ends with suggestions and recommendations for research in future.

SUMMARY:

Video assisted teaching programme is one carefully organized and presented to the subject in order to achieve the intended goal. So the investigator studied **the effectiveness of video Assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women in selected areas at Erode.**

The objectives of the study were,

1. To assess the knowledge among menopausal women, before and after video assisted teaching programme regarding osteoporosis and its prevention.

2. To implement and evaluate the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women.

3.To find out the association between knowledge of menopausal women regarding osteoporosis and its prevention with selected demographic variables such as Age, marital status, education, religion, occupation, socio economic status, type of family, and family history of osteoporosis.

HYPOTHESES

The following hypothesis were set for the study and the entire hypothesis were tested at 0.05 level.

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H_1- video assisted teaching programme will be effective in improving the knowledge regarding osteoporosis and its prevention among menopausal women.

H_2- There will be significant association between the knowledge of menopausal women regarding osteoporosis and its preventions with their selected demographic variables such as age, marital status, education, religion, occupation, socio economic status, type of family, and family history of osteoporosis.

Major findings of the study:

1. Mean difference between pre-test and post-test score of knowledge in experimental group was significant at 0.05 level.
2. Mean difference between post-test score of knowledge in control and experimental group was significant at 0.05level
3. There was significant association between the post-test score of knowledge in control group and family history of osteoporosis (**$p<0.05$**)
4. There was no relationship exist between score of knowledge and selected demographic variables in experimental group.

CONCLUSION

The following conclusions were drawn from the study,

This study proved to be very essential as video assisted teaching programme play an important role in enhancing knowledge regarding osteoporosis and its prevention among menopausal women.

- The level of knowledge regarding osteoporosis was increased among Menopausal women who received video assisted teaching programme.

IMPLICATIONS FOR NURSING

The findings of the present study have implication in

- Nursing practice,

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- Nursing Education
- Nursing administration
- Nursing research.

Nursing Practice

- Nurses play a vital role in helping the patients by increasing the knowledge regarding osteoporosis and its prevention for menopausal women.
- video assisted teaching programme can be used to increase the knowledge regarding osteoporosis and its prevention for menopausal women.
- Nurses are in an excellent position to assess and counsel their patients about the importance of osteoporosis and its prevention.
- The nursing personnel working in community set up can reinforce the importance of osteoporosis and its prevention to patients, family members and other health care team members.
- This video assisted teaching programme can be used in various settings like hospitals, old age home etc.

Nursing Education

- Nursing personal working in various health setting should be given in-service education to update this knowledge and ability to identify the learning needs of the patients on osteoporosis and its prevention in order to increase the knowledge regarding osteoporosis and its prevention for menopausal women.
- Nursing educator should educate the nursing professionals about the effectiveness video assisted teaching programme to increase the knowledge regarding osteoporosis and its prevention for menopausal women.
- Nursing students should be encouraged to participate in the education of patients regarding osteoporosis and its prevention.

Nursing Administration

- The nurse administrator should arrange in-service education to update their subordinates knowledge regarding osteoporosis and its prevention for menopausal women
- **N**urse administrator can review the policies of video assisted teaching programme as a protocol for to increase the knowledge regarding osteoporosis and its prevention.
- Nurse administrator can encourage the researchers to conduct the research to

`

Identify the effectiveness of video assisted teaching programme osteoporosis and its prevention for menopausal women

- Cost effective production of materials used for teaching by the nursing staff should be encouraged.
- The administrator should make arrangements to prepare adequate A.V. Aids for giving health education.

Nursing Research

- It is essential to identify the present level of knowledge of menopausal women regarding osteoporosis and its prevention to know the extent of information necessary to be taught.
- Further research must be conducted to identify more effective methods for patient education.
- This study also brings out the fact that more studies can be done in different settings.

RECOMMENDATIONS

- A similar study can be conducted on a larger sample.
- A similar study can be done using true experimental design.
- A similar study can be conducted with a post-test after 4 weeks, 6 weeks interval to evaluate the retention of knowledge.
- A comparative study can be conducted among menopausal women at rural and urban areas.

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ANNEXURE –A

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A LETTER REQUESTING PERMISSION FOR CONDUCTING THE FINAL STUDY

NANDHA COLLEGE OF NURSING

(Approved by INC, New Delhi and TNNMC, Chennai
Affiliated to The Tamilnadu Dr. M.G.R. Medical University, Chennai)

Koorapalayam "Pirivu",
Pitchandampalayam Post,
ERODE - 638 052.
TAMILNADU.

Tel : 04294 - 224611, 221405
Fax : 04294 - 224622
Web : www.nandhainstitutions.org
E-mail : nandha_nursing@yahoo.co.in

Prof. R.VASANTHI, M.Sc.(Nur).,
Principal

Date 01.09.2015

To

The Medical Officer,
Primary Health Centre,
Thindal,
Erode.

Dear Sir,

Sub : Nandha College of Nursing, Erode – M.Sc. (Nursing) Degree Course – Conducting Research Study – Permission requested – Reg.

* * *

We would like to bring to your kind perusal that we are planned to send our Second year M.Sc.(Nursing) student namely **Ms. S.KOKILA PRIYA** to conduct a research study in the Pudhu Colony and Karaparai area which is covered by your centre for a period of one month from 01.09.2015 onwards as a part of their curriculum.

We assure that she will not disturb the routine function of the centre.

Hence, we request you to kindly accord permission to our student for the above said purpose.

This is for your kind perusal and favourable action.

Thanking you,

Yours faithfully,

Permitted
05/9/15
MEDICAL OFFICER
Primary Health Centre
CODE-638009

PRINCIPAL
NANDHA COLLEGE OF NURSING

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ANNEXURE –B

`

A LETTER REQUESTING EXPERT OPINION FOR CONTENT VALIDITY OF TOOLS

LETTER SEEKING EXPERT OPINION FOR CONTENT VALIDITY OF TOOLS

From:

Kokilapriya.s,
M.Sc., Nursing II Year
Nandha College of Nursing
Erode.

To:

_____

_____

_____

Through

The Principal,
Nandha College of Nursing
Erode-52.

PRINCIPAL
NANDHA COLLEGE OF NURSING
ERODE.

SUB: Request expert's opinion on content validity of tool

Dear sir/madam

Iam a final year Master of nursing student in Nandha College of Nursing. I have selected the under mentioned topic for research project to be submitted to the Dr.M.G.R. University of Tamilnadu in partial fulfillment of university requirements for the award of Master of Nursing Degree.

TOPIC: "A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION AMONG MENOPAUSAL WOMEN IN SELECTED AREAS AT ERODE"

I request you to kindly go through these tools i.e., interview schedule for collecting demographic data and self structured questionnaires to assess the level of knowledge regarding osteoporosis and its prevention among menopausal women, and give your valuable opinion and comments for any modification and improvement in the tool. A copy of the objectives has also been enclosed along with, I shall grateful to you would be return the validated tool by.....as we are supposed to conduct our final study by ..... and also for the expert opinion and kind cooperation solicited.

Thanking you,

Date:
Place:

Yours sincerely
Kokilapriya.s

CONTENT VALIDITY CERTIFICATE

I hear by certify I have validated the teaching content of Kokilapriya.s. M.Sc (Nursing) II year student of Nandha College of Nursing Dr.M.G.R. Medical University, Tamilnadu, who has under taken the dissertation titled,

"A Study to Assess the Effectiveness of Video Assisted Teaching Programme on Knowledge Regarding Osteoporosis And Its Prevention among Menopausal Women in Selected Areas at Erode"

Place:

Date:

Signature of the Expert:

Dr. A. PRAKASH, M.S. ORTHO
REGN. No : 85583
ORTHO LIFE HOSPITAL,
ANUSHA HOSPITAL COMPLEX,
G.H. OPP., ERODE - 638 009.

Name:

Designation:

TOOL VALIDITY CERTIFICATE

I hear by certify I have validated the teaching content of kokilapriya.s, M.Sc (Nursing) II year student of Nandha College Of Nursing Dr.M.G.R. Medical University, Tamilnadu, who has under taken the dissertation titled,

A Study to Assess the Effectiveness of Video Assisted Teaching Programme on Knowledge Regarding Osteoporosis And Its Prevention among Menopausal Women In Selected Areas At Erode"

Place: Komarapalayam

Date: 18.9.15

S.Obulakshmi 18/1/16.

Signature of the Expert:

Name: S.OBULAKSHMI

Designation: Asso. Professor.
Anbu College of
Nursing.

CONTENT VALIDITY CERTIFICATE

I hear by certify I have validated the teaching content of Kokilapriya.s. M.Sc (Nursing) II year student of Nandha College of Nursing Dr.M.G.R. Medical University, Tamilnadu, who has under taken the dissertation titled,

"A Study to Assess the Effectiveness of Video Assisted Teaching Programme on Knowledge Regarding Osteoporosis And Its Prevention among Menopausal Women in Selected Areas at Erode"

Place: KUMARAPALAYAM

Date:

Signature of the Expert:

Name: M. AROCKIA MARY, MS(N)

Designation: READER
SRF SAKTHIMAYEIL INSTITUTE
OF NSG& RESEARCH
KUMARAPALAYAM

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ANNEXURE –C (EDITORS CERTIFICATES)

CERTIFICATE BY THE TAMIL EDITOR

This is to certify that the dissertation entitled," A Study to assessed the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women in selected areas at Erode". is a bonafied research work by kokilapriya.s,II year M.sc(Nursing),student of Nandha college of Nursing, koorapalayam pirivu, pitchandampalayam post, Erode district. Edited the manuscript on behalf of the partial fulfillment of the prerequisite for the degree of Master in Nursing (community health Nursing).

Signature of the Editor:

Name: P. MOORTHY

Designation:

பெ.மூர்த்தி எம்.ஏ., பி.எட்.,
பட்டதாரி ஆசிரியர் தமிழ்
அரசு உயர்நிலைப்பள்ளி
கோரணம்பட்டி 637102,
எடப்பாடி (வ), சேலம் (மா).

CERTIFICATE BY THE EDITOR

This is to certify that the dissertation entitled," A Study to assess the effectiveness of video assisted teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women in selected areas at Erode". is a bonafied research work by kokilapriya.s,II year M.sc(Nursing),student of Nandha college of Nursing, koorapalayam pirivu, pitchandampalayam post, Erode district. Edited the manuscript on behalf of the partial fulfillment of the prerequisite for the degree of Master in Nursing (community health nursing.

Signature of the editor:

Name: C. SAKUNTALA

Designation: B.T. ASST

Govt. High School
Koranampatty-637 102.
Edappady (Tk), Salem (Dt)

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ANNEXURE-D

STRUCTURED INTERVIEW SCHEDULE

SECTION-I

1 .Age

1	**2**	**3**	**4**

1] 40 – 45 years

2] 46 – 50 years

3] 51 -55 years

2 . Marital status

1	2	3	4

1] Married

2] Unmarried

3] Widow

3 . Religion

1	2	3	4

1] Hindu

2] Christian

3] Muslim

4. Education

1	2	3	4

1] Illiterate

2] Schooling

3] Undergraduate

4] Postgraduate

5. Occupation

1	2

1] Homemaker

2] Working women

`

6. Type of family

1	2

1] Nuclear family

2] Joint family

7. Socio economic status

1	2	3

1] Low

2] Middle

4] High

8. Family history of osteoporosis

1	2

1] Yes

2] No

`

SECTION II

KNOWLEDGE QUESTIONNAIRES

I. General Information:

1. What is mean by osteoporosis?

A	B	C	D

A. Decreased Bone Density

B. Bone Weakness.

C. Increased Bone Strength.

D. Fracture.

2. What is meant by menopause?

A	B	C	D

A. Painful Menstruation

B. Stoppage of Menstrual Cycle

C. Irregular Menstrual Cycle

D. Starting Of Menstrual Cycle

3. What are the types of menopause?

A	B	C	D

A. Peri -Menopause

B. Menopause

C. Post Menopause

D. All of The Above

4. What is the other name for osteoporosis?

A	B	C	D

A. Silent Skeletal Disorder

B. Silent Muscle Disorder

C. Silent Tissue Disorder

D. Silent Nerve Disorder

5. Which condition is characterized by fragile brittle bones?

A. Arthritis

B.Osteoporosis

A	B	C	D

C. Spongylitis

D.Osteopenia

`

6. Which age group the menopause occurs?

A	B	C	D

A . 45-55 Years

B. Below 40 Years

C. Above 60 Years

D.55-65 Years

7. Who is commonly affected by osteoporosis?

A	B	C	D

A. Men

B. Children

C. Menopausal Women

D. Old age

II. Risk Factor, Signs &Symptoms, Diagnostic Evaluation

8. Why the early menopause is a high risk factor for osteoporosis?

A	B	C	D

A. Psychological Distress

B. Lack of Sex Hormones

C. Nutritional Deficiency

D. Diseases

9. Which one is the common risk factor for osteoporosis?

A	B	C	D

A. Diet and Life Style

B. Intake of Medications

C. Chronic Illness

D. Infections

10. What are the signs and symptoms of osteoporosis?

A	B	C	D

A. Fracture

B .Postural Changes

C. Low Back Pain

D. All of The Above

`

11. Which body part is affected by osteoporosis

A	B	C	D

A. Bone

B. Heart

C. Skin

D. Kidney

12. Which of the following is not a common complaint with osteoporosis?

A	B	C	D

A. Low Back Pain

B. Loss of Height

C. Swelling of the Feet

D. Fracture

13. What is the diagnostic evaluation for the osteoporosis?

A	B	C	D

A. USG Abdomen

B. Endoscopy

C. Bone Mineral Density Test

D. Bronchoscopy

14. Which group of person is needed to undergo for osteoporosis screening

A	B	C	D

A. Men

B. Women above 40 Years

C. Children

D. Old age

III. Preventive Measures

15. Which of the following drug is used to treat osteoporosis?

A	B	C	D

A. Antibiotics

B. Calcium& Vitamin D Supplement

C. Anti-Inflammatory

D. Steroids

`

16. What is the surgical treatment for the osteoporosis?

A	B	C	D

A. Eye Surgery

B. Liver Surgery

C. Heart Surgery

D. Joint Replacement

17. How many years need to take treatment for the osteoporosis?

A	B	C	D

A.6-12 Years

B.4-5 Years

C.1-3 Years

D.11-15 Years

18. Which of the following is the preventive measure for osteoporosis?

A	B	C	D

A. Increased Intake of Iron

B. Increased Intake of Fat

C. Increased Intake of Protein

D. Maintained Adequate Intake of Calcium &Vitamin D

19**. Which type of food content has rich sources of calcium**

A	B	C	D

A. Apple

B. Carrot

C. Milk &Milk Products

D. Pulses

20. How much amount of calcium recommended per day?

A	B	C	D

A.400 Mg

B.800 Mg

C.1200 Mg

D.1500 Mg

21. Which type of sources is more rich in vitamin D

A	B	C	D

A. Sunlight

B. Fish Oil

C. Meat

D. Egg

`

22. Which of the following minerals increases the bone density?

A	B	C	D

A. Sodium

B. Zinc

C. Calcium

D. Potassium

23. What is the exercises practices for prevention of osteoporosis

A	B	C	D

A. Weight Bearing Exercises

B. yoga

C. bicycling

D. swimming

24. Which of the following is essential life style modification for prevention of osteoporosis?

A	B	C	D

A. Avoid Bad Habits (Smoking, Consumption of Alcoholism)

B. Increased Intake of Junk Foods

C. Minimizing the Physical Activity

D. Increased Intake of Pulses

25. How many hours the weight bearing exercises has to perform

A	B	C	D

A.1 hour

B.30 minutes

C.2 hours

D.3 hours

`

ANNEXURE-E

STRUCTURED INTERVIEW SCHEDULE AND QUESTIONNAIRES

(TAMIL VERSON)

xUq;fikf;fg;gl;l Neh;fhzy; jpl;lk;

Fwpg;G : fPo;f;fhZk; fhhpaq;fspy; rhpahdtw;iw tl;lkplTk;

<u>nghJthd tpguq;fs;</u>

I. taJ Mz;Lfspy;

1. 40 – 45 taJ
2. 41 – 50 taJ
3. 51 – 55 taJ

II. jpUkz tpguk;

1. jpUkzk; Mdth;
2. jpUkzk; Mfhjth;
3. fztid ,oe;jth;

III. kjk;

1. ,e;J
2. K];yPk;
3. fpwp];Jth;
4. kw;wit

`

IV. fy;tp epiy

1. gbg;gwpT ,y;yhjth;
2. Jtf;f fy;tp ngw;wth;
3. gzpnuz;lhk; tFg;G Kbj;jth;
4. gl;l gbg;G

V. Ntiy

1. tPl;by; ,Ug;gth;
2. Ntiyf;F nry;gth;

VI. FLk;g tif

1. jdpf; FLk;gk;
2. $l;Lf; FLk;gk;

VII. FLk;g nghUshjhu epiy

1. Fiwe;j tUkhdk;
2. kpjkhd tUkhdk;
3. mjpf tUkhdk;

VIII. jq;fsJ FLk;gj;jpy; ahUf;NfDk; vYk;Giu (M];bNahNghNuhrp];) cs;sjh?

1. Mk;
2. ,y;iy

`

1. vYk;Gg;Giu vd;gJ (M];bNahNghNuhrp];)

a. Fiwthd vYk;G mlh;j;jp
b. eyptile;j vYk;G
c. vYk;gpd; typik mjpfhpj;jy;
d. vYk;G KwpT

2. khjtplha; Row;rp Kbtiljy; vd;gJ

a. khjtplhapd; NghJ typ Vw;gLjy;
b. khjtplha; Row;rp epWj;jk;
c. khjtplha; Row;rp xOq;fpd;ik
d. khjtplha; Row;rp njhq;Fjy;

3. khjtplha; Row;rp Kbtiljypd; tiffs;.

a. khjtplha; Row;rp Kbtiljypd ;Kd; epiy
b. khjtplha; Row;rp Kbtiljypd; NghJ
c. khjtplha; Row;rp Kbtiljypd; gpd;epiy
d. NkNy Fwpg;gpl;l midj;Jk;

4. nghJthf khjtplha; Row;rp Kbtiltjhy; Vw;gLk; vYk;Gg; Giu vd;gJ

a. Kd;mwpFwpapy;yhj vYk;G Neha;
b. Kd;mwpFwpapy;yhj jir Neha;
c. Kd;mwpFwpapy;yhj jpR Neha;
d. Kd;mwpFwpapy;yhj euk;GNeha;

5. rpWrpWJz;lhf vYk;G Kwpjy; ve;j Nehapd; mwpFwp

a. %l;Ltyp
b. vYk;Gg; Giu
c.];ghd;[piyb];
d. M];bNahgpdpah

6. ve;j tajpy; cs;sth;fSf;F khjtplha; Row;rp Kbtiljy; Vw;gLk;?

a. 45-55 tajpy;
b. 40 tajpw;Fk; fPo;
c. 60 tajpw;F Nky;
d. 55-65 tajpy;

7. nghJthf vYk;Gg;Giuapdhy; ghjpf;fg;gLgth;fs;

a. Mz;fs;
b. Foe;ijfs;
c. khjtplha; Row;rp Kbtile;j ngz;fs;
d. Kjpath;fs;
e.

8. vYk;Gg;Giu Vw;gl fhuzk; Kd;djhfNt khjtplha; Row;rp Kbtiljy; Vndd;why;

a. kd mOjj;k;
b. Fiwthd ghypd `hh;Nkhd;fs;
c. czTf;FiwghL

`

d. Neha;fs;

9. vYk;Gg;Giu Vw;gLjw;fhd mjpf fhuzpfs;

a. czT kw;Wk;gof;f tof;fq;fs;
b. kUe;Jfis cl;nfhs;Sjy;
c. ePz;lfhy Neha;
d. Neha;j;njhw;W

10. vYk;Gg;Giuapd; mwpFwpfs;

a. vYk;G KwpT
b. cly; mikg;G khWjy;
c. fPo;g;gFjpapy; KJF typ
d. midj;Jk;

11. vYk;Gg;Giuapdhy; ve;j cly; gFjp ghjpg;gilfpwJ

a. vYk;G
b. ,Ujak;
c. Njhy;
d. rpWePufk;

12. gpd;tUtdtw;Ws; vJ nghJthd vYk;Gg;Giuapw;fhd mwpFwp ,y;iy?

a. fPo;g;gFjpapy; KJFtyp
b. cauk; Fiwjy;
c. fhy; tPf;fk;
d. vYk;G KwpT

13. vYk;Gg;Giuia fz;lwpAk; Ma;Tf;$l;LKiw

a. tapw;Wg;gFjp- my;l;uhrTz;l;
b. cs;Nehf;fp (vz;Nlh];Nfhg;gp)
c. vYk;gpy; vs;s jhJg;nghUspd; mlh;j;jp fz;lwpjy;
d. Rthrg;ghij cs;Nehf;fp

14. ve;j tifapdUf;F vYk;Gg;Giu fz;lwpAk; Kiw mtrpakhdJ

a. Mz;fs;
b. ngz;fs; 40 tajpw;F Nky;
c. Foe;ijfs;
d. tajhdth;fs;

15. vYk;Gg;Giu Vw;gLk;NghJ vLj;Jf;nfhs;s Ntz;ba kUe;Jfs;

a. Md;bgahbf;];
b. fhy;rpak; kw;Wk; itl;lkpd; b kUe;Jtiffs;
c. mow;rp ePf;fp kUe;J
d.];Buha;Lfs;

16. vYk;Gg;Giuapw;fhd mWitrpfpr;ir Kiw

a. fz; mWit rpfpr;ir
b. fy;yPuy; mWitrpfpr;ir
c. ,Ujak; mWitrpfpr;ir
d. %l;L khw;Wjy; mWitrpfpr;ir

17. vYk;Gg;Giuapw;F vj;jid Mz;Lfs; rpfpr;ir vLj;Jnfhs;s Ntz;Lk;?

`

a. 6-12 tUlq;fs;
b. 4-5 tUlq;fs;
c. 1-3 tUlq;fs;
d. 11-15 tUlq;fs;

18. vYk;Gg;Giuapid jLf;Fk; Kiwfs;

a. mjpf ,Uk;Grj;Js;s czT vLj;Jf;nfhs;Sjy;
b. mjpf nfhOg;G rj;Js;s czT vLj;Jf;nfhs;Sjy;
c. mjpf Gujr;rj;Js;s czT vLj;Jf;nfhs;Sjy;
d. Njitahd msT fhy;rpak; kw;Wk; itl;lkpd; b czT vLj;Jf;nfhs;Sjy;

19. fPo;f;fhz;gitfspy; fhy;rpak; epiwe;j czTg; nghUs; vJ?

a. Mg;gps;
b. Nful;
c. ghy; kw;Wk; ghy; rhh;e;j nghUs;fs;
d. gUg;G tiffs;

20. xU ehisf;F ruhrhpahf vLj;Jf;nfhs;s Ntz;ba fhy;rpaj;jpd; msT

a. 400 mg
b. 800 mg
c. 1200 mg
d. 1500 mg

21. fPo;f;fhz;gitfspy; itl;lkpd; b vjpy; mjpfk; fhzg;gLfpwJ?

a. #hpa xsp
b. kPd; vz;nza;
c. khkprk;
d. Kl;il

22. gpd;tUtdtw;Ws; vj vYk;gpd; jhJg;nghUs; mlh;j;jpapid mjpfkhf;FfpwJ?

a. Nrhbak;
b. rpq;f;
c. fhy;rpak;
d. nghl;lhrpak;

23. vYk;Gg;Giuapid Fiwf;f nra;a Ntz;ba clw;gapw;rpfs;

a. viljhq;Fk; clw;gapw;rp
b. Nahfh
c. kpjptz;b gapw;rp
d. ePr;ry; gapw;rp

24. vYk;Gg;Giuapid fl;Lg;gLj;j filgpbf;f Ntz;bag of;f tof;fq;fs;

a. jtwhd gof;f tof;fq;fis jtph;j;jy; (Gifgpbj;jy;> kJ mUe;Jjy;)
b. mjpfkhd Jhpj czTfis vLj;Jf;nfhs;Sjy;
c. cly; nray;fis Fiwj;jy;
d. gUg;G tiffs; mjpfkhf vLj;Jf;nfhs;Sjy;

`

25. viljhq;Fk; clw;gapw;rpapid nra;a Ntz;ba fhy Neuk;.

a. 1 kzp Neuk;
b. 30 epkplq;fs;
c. 2 kzp Neuk;
d. 3 kzp Neuk;

ANNEXURE-F
VIDEO ASSISTED TEACHING PROGRAMME CONTENT IN ENGLISH

OSTEOPOROSIS

INTRODUCTION:

- Osteoporosis is a major global public health problem associated with significant morbidity, mortality and socio economic burden.
- The prevalence of osteoporosis in worldwide estimates of 200 million people are affected with osteoporosis.
- The prevalence of osteoporosis among women in india estimates of 46 million people are affected with osteoporosis.

`

DEFINITION:

- It is defined as a skeletal disorder characterized by low bone strength, leading to an increased risk of fragility fractures.
- The greatest bone loss occurs in women during peri menopause and is associated estrogen in sufficiency.

CLASSIFICATION:

1) Primary osteoporosis

2) Secondary osteoporosis

PRIMARY OSTEOPOROSIS:

- Primary osteoporosis is the most common form and it occurs during old age, menopausal women.
-

SECONDARY OSTEOPOROSIS:

- Secondary osteoporosis is diagnosed when the condition is related to another illness, nutritional complication, or as a side effect of medications.

CAUSES/ RISK FACTORS:

Factors increasing Risk	Factors decreasing Risk
➢ History of fracture ➢ Family history of osteoporosis ➢ Family history, small build,short structure. ➢ Race : Causation /Asian ➢ Gender : Post menopausal female ➢ Physical inactivity ➢ Poor calcium / vitamin D intake ➢ Heavy drinking and smoking ➢ Tobacco use ➢ Excessive caffeine , alcohol , protein intake ➢ Some medication and medical condition.	➢ Estrogen replacement therapy ➢ Large bone mass ➢ African – American male ➢ Weight bearing exercise ➢ Overall , adequate diet ➢ Non smoker

`

➢ Amenorrhea	

OTHERS:

- ➢ Rheumatoid arthritis
- ➢ Crohn's disease
- ➢ COPD
- ➢ Hyperthyroidism/ Hyperparathyroidism
- ➢ Mal absorption problems
- ➢ Long term use of certain medications
- ➢ Disorders of adrenal glands
- ➢ Cushing's syndrome.
- ➢ Reduced amounts of sex hormones (Estrogen and Testosterone)
- ➢ High dose oral corticosteroids
- ➢ Anorexia or bulimia
- ➢ Long periods of inactivity , such as long term bed rest

SIGNS AND SYMPTOMS:

There typically are no symptoms in the early stages of bone loss. But once bones have been weakened by osteoporosis, you may have signs and symptoms that include:

- Back pain.
- Loss of height over time
- A stooped posture
- Joint and muscle pain
- A bone fracture that occurs much more easily than expected
- Decreased physical activity.

DIAGNOSTIC FINDINGS:

Dual energy X ray absorptiometry (DEXA or DXA Scan)

X ray

- ❖ A DEXA scan can be used to help diagnose osteoporosis. It's a quick, safe and painless procedure that usually takes about five minutes, depending on the part of the body being scanned.
- ❖ Standard deviation is a measure of variability based on an average or expected value. A T Score of
  - o Above -1 SD is normal
  - o Between – 1 and -2.5 SD is defined as decreased bone mineral density compared with peak bone mass below -2.5 is defined as osteoporosis.

`

- Fracture risk assessment tool to help predict a person's risk of fracture between the ages of 40 and 90.

COMPLICATIONS:

- **Fracture:**
  - Wrist fractures, hip fractures and fractures of the vertebrae (bones in the spine) are the most common type of breaks that affect people with osteoporosis. However, they can also occur in others bones, such as in the arm, ribs or pelvis.

TREATMENT:

1) **Drug Therapy**

Classification	Drug	Action	Side effects
Bisulphosphonates	Alendronate rise ibabdronate zotedronic acid Ibandronate	-Reduce bone loss, increase bone density and reduce the risk of spine & hip fractures. -FDA approved for both prevention & treatment.	GI upset, join pain, nausea, Heartburn
Calcitonin	Fortical	Bone fractures approved for treatment only.	Skin rash, liver diarrhea flushing, loss of appetite head back ache.
[SERM] Selective estrogen receptor modulators			

`

2) DIETARY MANAGEMENT:

CALCIUM:

- ❖ Eating a healthy balanced diet is recommended for everyone.
- ❖ Calcium is important for maintaining bone strength. Adults need 700mg a day.
- ❖ Having an adequate dietary calcium intake throughout life is also vital. Ministry of Health recommends the following daily intake of calcium for healthy individuals:

1 to 3 years	500 mg	200 IU
4 to 8 years	800 mg	200 IU
9 to 18 years	1,300 mg	200 IU
19 to 50 years	1,000 mg	200 IU
51 to 70 years	1,200 mg	400 IU
Over 70 years	1,200 mg	600 IU

VITAMIN-D:

Calcium helps build and maintain bone and vitamin D helps your body absorb calcium.

Sources of Vitamin D

- Sunlight
- Food
- Supplements

`

3)EXERCISE:

Regular weight bearing exercise is essential. Adult aged 19 to 64 should do at least 30 mints of moderate- intensity aerobic activity, such as cyclic or fast walking, atleast 3 times every week.

Physical activities are

- Walking
- Swimming
- Dancing
- Cycling
- jumping
- Strength exercise
- Balance exercise
- Flexibility exercises
- Sitting exercises

PREVENTION

Prevention is better than treatment and evidence suggests that maximizing bone density in early and middle life helps to reduce the risk of osteoporosis in later life. Steps that can be taken to help prevent osteoporosis include:

1) Life style modification:

- Not smoking
- Limiting alcohol intake
- Limiting tobacco usage
- Limiting coffee/tea intake
- Maintaining a healthy body weight

2) Exercises:

Regular weight bearing exercise is essential. Adult aged 19 to 64 should do at least 30 mints of moderate- intensity aerobic activity, such as cyclic or fast walking, atleast 3 times every week.

3) **Hormonal Replacement Therapy:**

- Considering HRT for women during menopause. it helps to increases the bone density.

4) Diet:

`

An adequate calcium intake and adequate amounts of vitamin D are important foundations for maintaining bone density and strength.

Calcium rich foods:

You can get calcium from foods, supplements, or a combination of the two.

We all know that milk is a great source of calcium, but you may be surprised by all the different foods you can work into your diet to reach your daily recommended amount of calcium. Use the guide below to get ideas of additional calcium-rich foods to add to your weekly shopping list.

Produce	Serving Size	Estimated Calcium*
Collard greens, frozen	8 oz	360 mg
Broccoli rabe	8 oz	200 mg
Kale, frozen	8 oz	180 mg
Soy Beans, green, boiled	8 oz	175 mg
Figs, dried	2 figs	65 mg
Broccoli, fresh, cooked	8 oz	60 mg
Oranges	1 whole	55 mg
Seafood		
Sardines, canned with bones	3 oz	325 mg
Salmon, canned with bones	3 oz	180 mg
Shrimp, canned	3 oz	125 mg
Dairy		
Ricotta, part-skim	4 oz	335 mg
Yogurt, plain, low-fat	6 oz	310 mg
Milk, skim, low-fat, whole	8 oz	300 mg
Yogurt, Greek	6 oz	200 mg
Ice Cream, vanilla	8 oz	85 mg
Fortified Food		

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Almond milk, rice milk or soy milk, fortified	8 oz	300 mg
Orange juice and other fruit juices, fortified	8 oz	300 mg
Tofu, prepared with calcium	4 oz	205 mg
Oatmeal, fortified	1 packet	140 mg
Cereal, fortified	8 oz	100-1,000 mg
Other		
Mac & cheese, frozen	1 package	325 mg
Pudding, chocolate, prepared with 2% milk	4 oz	160 mg
Beans, baked, canned	4 oz	160 mg

Common sources:

- ❖ fenugreek, spinach, ladies finger, beetroot, cabbage, figs, grapes, dates, oranges, raisins, apples banana, papaya.
- ❖ Eggs, milk, milk products, oily fish etc..,

4) SURGICAL TREATMENT:

- ✓ **Knee replacement**

CONCLUSION:

Treatment and prevention will normally focus on lifestyle changes and medications to boost bone density

VIDEO ASSISTED TEACHING PROGRAMME CONTENT IN TAMIL

`

vYk;Gg; Giu

Kd;Diu:

vYk;G Giu (M];bNahNuhrp];) cyf mstpy; kf;fspd; cly; eyid nghpJk; ghjpf;fpwJ.

cyf mstpy; 200 kpy;ypad; kf;fs; M];bNahNghNuhrprhy; ghjpf;fg;gl;Ls;sdh;.

,e;jpa mstpy; 46 kpy;ypad; kf;fs; (ngz;fs;) M];bNahNghNuhrprhy; ghjpf;fg;gl;Ls;sdh;.

tiuaiw:

vYk;Gg; Giu vd;gJ mjpfkhf vYk;G KwpT Mgj;ij Vw;gLj;Jk; xU vYk;G rk;ge;jg;gl;l Neha; MFk;. vYk;Gg; Giuapdhy; clypy; vYk;Gj; jhJ mlh;j;jp FiwtJk;> vYk;G Ez;zpaf; fl;likg;G jfh;f;fg;gLtJk; epfo;fpwJ.

vYk;Gg;Giu khjtplha; epw;wYf;Fg; gpd; ngz;fSf;F mjpfkhf Vw;gLtjhy; ,J khjtplha;f;Fg; gpe;ija vYk;Gg; Giu vd;wiof;fg;gLfpwJ.

tiffs;:

1. **Kjy; epiy vYk;Gg;Giu:**

   nghJthf tajhdth;fs; kw;Wk; khjtplha; Row;rp Kbtile;j ngz;fSf;F Vw;gLtJ MFk;.

2. **,uz;lhk;epiy vYk;Gg;Giu**

   kw;w Neha;fspd; Jhz;Ljypdhy; Vw;gLtJ MFk;.

Mgj;Jf; fhuzpfs;:

1. **khw;wpaikf;f Kbahjit**
   - taJ Kjph;T (ngz;fs; kw;Wk; Mz;fs;)
   - **ngz;fs;**
     - ❖ khjtplha; epw;wypw;Fg; gpwF
     - ❖ vYk;G jhJ mlh;j;jp Fiwjy;
   - **Mz;fs;**
     - ❖ nl];Nlh];bNuhd; msTfs; FiwT
   - vy;yh ,dQ;rhh;e;jth;fSf;Fk; INuhg;gpa my;yJ Mrpa kuGtop rhh;e;jth;fs;
   - FLk;g tuyhW vYk;G KwpT my;yJ vYk;Gg; Giu cs;sth;fs;.
   - Fiwthd vYk;Gj;jhJ mlh;j;jp ,Ug;gth;fs;
   - Fs;skhf ,Ug;gth;fs;

`

2. **rpW khw;wq;fSld; nray;gLj;jf; $bait.**
    - kpfTk; mjpfkhd kJ mUe;Jjy;
    - Gifgpbj;jy;
    - Gifapiy gad;gLj;Jjy;
    - mjpfkhf fhgp kw;Wk; B mUe;Jtijj; jtph;j;jy;
    - cztpy; Fiwthd fhy;rpak; vLj;Jf; nfhs;Sjy;
    - caph;r;rj;J Nf kw;Wk; caph;rj;J rp Mfpait cztpy; Fiwthf vLj;J nfhs;Sjy;.
    - caph;r;rj;J b FiwghL
    - tsh; ,sk; gUtj;jpd; NghJ mjpfkhd vYk;G vil FiwT.
    - Kjpath;fSf;fhd Fiwthd vYk;Gj;jhJ mlh;j;jp
    - Gujr;rj;J Fiwthf vLj;jy;

    - **cly; hPjpahf nrayw;w epiy**
    - **kpf mjpfkhd cly;hPjpahf nray;ghL**
    - mjpfkhd clw;gapw;rp vYk;GfSf;F njhlh;e;J Nrjj;ij Vw;gLj;Jk;.
    - neLQ;rhiy Xl;lj;jpd; Xl;lg;ge;ija tpuh;fs;
    - ngz;fs; fLikahd clw;gapw;rp nra;gth;fs;
    - **vil mjpfKs;s cNyhfq;fs;**
    - Nfl;kpak;> <ak; kw;Wk; vYk;G Neha;f;Fk; mjpfkhd njhlh;G ,Ug;gJ epWtg;gl;Ls;sJ.

mwpFwpfs;:

nghJthf vYk;G Giu (M];bNahNghNuhrp];) Muk;gepiyapy; mwpFwpfs; njd;gLtjpy;iy. Mdhy; rpy Neuq;fspy; fPo;f;fz;l Fwpg;gpl;l mwpFwpfs; njd;gLfpd;wd;.

- KJFtyp
- cauk; Fiwjy;
- %l;L kw;Wk; jirtyp
- cly; mikg;G khWgLjy; (KJF tise;J fhzg;gLjy;)
- Ntiy nra;Ak; jpwd; Fiwjy;
- vYk;G KwpT

fz;lwpAk; Ma;tf Kiw:

1. vYk;G jhJ mlh;j;jpia mstpLjy;
2. ,ul;il Mw;wy; CLfjph; cwpQ;Rikastpay; ,J T-];Nfhh; vd;W mstplg;gLfpwJ.

    - b-];Nfhh;- 1.0 my;yJ kpfg; nghpait vd;gJ ‘rhjhuzkhdJ”.

`

- b-];Nfhh;- 1.0 kw;Wk; 2.5 ,ilNa ,Ue;jhy; ‘Fiwthd vYk;G vil” my;yhj M];bNahgPdpah
- b-];Nfhh;- 2.5 my;yJ mjw;F Nky; ,Ue;jhy; vYk;Gg; GiuahFk;.

gpd; tpisTfs;:

vYk;G KwpT

vYk;G KwpT Vw;gLk; ,lq;fs; nghJthf:

- Ks;se;jz;L
- tpyh vYk;G
- ,Lg;G vYk;G
- kzpfl;L

rpfpr;ir Kiwfs;:

kUj;Jtk;:

- gp];‡Ngh];‡NghNdl;Lfs;
- nlhpg;gul;ill;L
- Jue;jpak; nudNyl;
- fhy;rpak; rj;J khj;jpiufs;

,J Nghd;w kUe;Jfs; kUj;Jth;fshy; ghpe;Jiuf;Fg; gLfpwJ.

Cl;lr;rj;J:

- fhy;rpak;
  vYk;G tsh;r;rp> vYk;G Fzkhjy; kw;Wk; vYk;G typikia jf;f itj;jy; Mfpatw;wpw;F Mjutspg;gjw;F fhy;rpak; mtrpakhfpwJ.

midj;J tajpw;Fk; Njitg;gLk; fhy;rpaj;jpd; msT ml;ltiz

taJ (0-70)	fhy;rpak;	itl;lkpd;- b
0-6 khjq;fs;	210 kpy;yp fpuhk;	200 IU
7-12 khjq;fs;	270 kpy;yp fpuhk;	200 IU
1-3 Mz;Lfs;	500 kpy;yp fpuhk;	200 IU
4-8 Mz;Lfs;	800 kpy;yp fpuhk;	200 IU
9-18 Mz;Lfs;	1300 kpy;yp fpuhk;	200 IU
19-50 Mz;Lfs;	1000 kpy;yp fpuhk;	200 IU
51-70 Mz;Lfs;	1200 kpy;yp fpuhk;	400 IU
70f;FK; Nkw;gl;l	1200 kpy;yp fpuhk;	600 IU

`

itl;lkpd; -b

fhy;rpaj;jpd; itl;lkpd;- b I vLj;Jf; nfhs;tjpdhy; vYk;G mlh;j;jp 1% mjpfhpf;fpwJ. #hpa xspapy; itl;lkpd;- b mjpfk; cs;sJ. Mjyhy; #hpa xsp ekJ clypy; gLtjhy; itl;lkpd;- b apd; msT clypy; mjpfkhfpwJ.

clw;gapw;rp:

ve;j xU clw;gapw;rpahf ,Ue;jhYk; 30 epkplq;fSf;F Fiwahky; thuj;jpw;F %d;W Kiw nra;a Ntz;Lk; vd;W kUj;Jth;fshy; ghpe;Jiuf;fg;gLfpwJ.

rpy clw;gapw;rpfs; gpd;tUkhW:

- elj;jy;
- ePe;Jjy;
- vil Rkj;jy;
- vjph;ghw;wy; clw;gapw;rp
- eldkhLjy;
- bnul;kpy; thf;fpq;
- rPUlw; gapw;rp
- Fjpj;jy;
- ePbj;jpUf;Fk; jpwd;.
- typikf;fhf nra;ag;gLk; clw;gapw;rpfs;
- kpjptz;b gapw;rp

jLf;Fk; Kiwfs;:

1. **kUe;J cl;nfhs;Sjy;:**
   kUj;Jthpd; MNyhridgb jtwhky; khj;jpiufis cl;nfhs;s Ntz;Lk;.
2. **tho;T Kiw khw;wq;fs;:**
   - Gifgpbj;jiy jtph;j;jy; my;yJ epWj;Jjy;
   - kJ mUe;Jtij jtph;j;jy; my;yJ Fiwj;Jf; nfhs;Sjy;
   - Gifapiy gad;gLj;Jtij jtph;j;jy;
   - mjpfkhf fhgp kw;Wk; B mUe;Jtij jtph;j;jy;
3. **clw;gapw;rpfs;:**
   - nkJNthl;lk;
   - elj;jy;
   - rPUlw; gapw;rp
   - kpjptz;b gapw;rp

,itfs; thuj;jpy; %d;W Kiw 30 epkplq;fSf;F Fiwahky; nra;jy; mtrpak;.

`

4. `hh;Nkhd; rpfpr;ir:

khjtplha; Kbtile;j ngz;fSf;F `hh;Nkhd; khj;jpiufs; kUj;Jth;fshy; ghpe;Jiuf;fg;gLfpwJ. ,J vYk;Gfspd; typikia mjpfg;gLj;j cjTfpwJ.

5. Cl;lr;rj;J:

fhy;tpak; kw;Wk; itl;lkpd; b NghJkhd msT cztpy; vLj;J nfhs;Sjy;. Gujrj;J czT vLj;J nfhs;Sjy;. fhy;rpak; rj;J epiwe;j czT tiffs;:

ghy; kw;Wk; ghy; rhh;e;j nghUl;fs;

- ghy;
- japh;
- ghyhil fl;b

nrwpT+l;lg;gl;l czTfs; (Xl;];> g;ul;> I];fphPk;> Nrhah kpy;f;)

- jhdpaq;fs; kw;Wk; gUg;G tiffs; (My;kz;l;) fha;fwp kw;Wk; fPiu tiffs;
- g;uhf;Nfhyp
- Kl;ilNfh];
- ‡NfNy
- lh;dpg; fpoq;F

goq;fs; kw;Wk; gor;rhW

- mj;jpgok;> MuQ;R
- MuQ;R gor;rhW

fly; rhh;e;j czT tiffs;

- ,why;
- kj;jp
- rhy; kz;l;kPd;

mWit rpfpr;irfs;:

- %l;L khw;Wjy; mWit rpfpr;ir

KbTiu:

Nkw;fz;l kUj;Jtk;> mWitr;rpfpr;ir kw;Wk; jLf;Fk; Kiwfis gpd;gw;Wtjd; %yk; vYk;G Giu (M];bNahNuhrp];) tuhky; jLf;fyhk;.

`

ANNEXURE-G

PHOTOGRAPH TAKEN DURING THE STUDY

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STRUCTURED INTERVIEW SCHEDULE

PART - A

1 .Age

1	**2**	**3**	**4**

1] 40 – 45 years

2] 46 – 50 years

3] 51 -55 years

2 . Marital status

1	2	3	4

1] Married

2] Unmarried

3] Widow

3 . Religion

1	2	3	4

1] Hindu

2] Christian

3] Muslim

4. Education

1	2	3	4

1] Illiterate

2] Schooling

3] Undergraduate

4] Postgraduate

5. Occupation

1	2

1] Homemaker

2] Working women

6. Type of family

1	2

1] Nuclear family

2] Joint family

7. Socio economic status

1	2	3

1] Low

2] Middle

4] High

8. Family history of osteoporosis

1	2

1] Yes

2] No

SECTION II

KNOWLEDGE QUESTIONNAIRES

I. General Information:

1. What Is Mean By Osteoporosis?

A	B	C	D

A. Decreased Bone Density

B. Bone Weakness.

C. Increased Bone Strength.

D. Fracture.

2. What Is Meant By Menopause?

A	B	C	D

A. Painful Menstruation

B. Stoppage of Menstrual Cycle

C. Irregular Menstrual Cycle

D. Starting Of Menstrual Cycle

3. What Are The Types Of Menopause?

A	B	C	D

A. Peri -Menopause

B. Menopause

C. Post Menopause

D. All of The Above

4. What Is The Other Name For Osteoporosis?

A	B	C	D

A. Silent Skeletal Disorder

B. Silent Muscle Disorder

C. Silent Tissue Disorder

D. Silent Nerve Disorder

5. Which Condition Is Characterized By Fragile Brittle Bones?

A. Arthritis

B.Osteoporosis

A	B	C	D

C. Spongylitis
D.Osteopenia

6. Which Age Group The Menopause Occurs?

A	B	C	D

A . 45-55 Years

B. Below 40 Years

C. Above 60 Years

D.55-65 Years

7. Who Is Commonly Affected By Osteoporosis?

A	B	C	D

A. Men

B. Children

C. Menopausal Women

D. Old age

II. Risk Factor, Signs &Symptoms, Diagnostic Evaluation

8. Why The Early Menopause Is A High Risk Factor For Osteoporosis?

A	B	C	D

A. Psychological Distress

B. Lack of Sex Hormones

C. Nutritional Deficiency

D. Diseases

9. Which One Is the Common Risk Factor for Osteoporosis?

A	B	C	D

A. Diet and Life Style

B. Intake of Medications

C. Chronic Illness

D. Infections

10. What Are The Signs And Symptoms Of Osteoporosis?

A	B	C	D

A. Fracture
B .Postural Changes
C. Low Back Pain
D. All of The Above

11. Which Body Part Is Affected By Osteoporosis

A	B	C	D

A. Bone

B. Heart

C. Skin

D. Kidney

A	B	C	D

12. Which Of the Following Is Not a Common Complaint with Osteoporosis?

A. Low Back Pain

B. Loss of Height

C. Swelling of the Feet

D. Fracture

13. What Is the Diagnostic Evaluation for the Osteoporosis?

A	B	C	D

A. USG Abdomen

B. Endoscopy

C. Bone Mineral Density Test

D. Bronchoscopy

14. Which group of person is needed to undergo for osteoporosis screening

A	B	C	D

A. Men

B. Women above 40 Years

C. Children

D. Old age

III. Preventive Measures

A	B	C	D

15. Which Of the Following Drug Is Used To Treat Osteoporosis?

A. Antibiotics
B. Calcium& Vitamin D Supplement
C. Anti-Inflammatory
D. Steroids

A	B	C	D

16. What Is the Surgical Treatment for the Osteoporosis?

A. Eye Surgery

B. Liver Surgery

C. Heart Surgery

D. Joint Replacement

A	B	C	D

17. How Many Years Need To Take Treatment for the Osteoporosis?

A.6-12 Years

B.4-5 Years

C.1-3 Years

D.11-15 Years

A	B	C	D

18. Which of the Following Is the Preventive Measures for Osteoporosis?

A. Increased Intake of Iron

B. Increased Intake of Fat

C. Increased Intake of Protein

D. Maintained Adequate Intake of Calcium &Vitamin D

A	B	C	D

19**. Which Type of Food Content Has Rich Sources of Calcium**

A. Apple

B. Carrot

C. Milk &Milk Products

D. Pulses

A	B	C	D

20. How Much Amount Of Calcium Recommended Per Day?

A.400 Mg
B.800 Mg
C.1200 Mg
D.1500 Mg

21. Which Type of Sources Is More Rich In Vitamin D

A	B	C	D

A. Sunlight

B. Fish Oil

C. Meat

D. Egg

22. Which Of the Following Minerals Increases the Bone Density?

A	B	C	D

A. Sodium

B. Zinc

C. Calcium

D. Potassium

23. What Is the Exercises Practices for Prevention of Osteoporosis

A	B	C	D

A. Weight Bearing Exercises

B. yoga

C. bicycling

D. swimming

24. Which Of the Following Is Essential Life Style Modification for Prevention of Osteoporosis?

A	B	C	D

A. Avoid Bad Habits (Smoking, Consumption of Alcoholism)

B. Increased Intake of Junk Foods

C. Minimizing the Physical Activity

D. Increased Intake of Pulses

25. How many hours the weight bearing exercises has to perform

A	B	C	D

A.1 hour
B.30 minutes
C.2 hours
D.3 hours

OSTEOPOROSIS

INTRODUCTION:

- Osteoporosis is a major global public health problem associated with significant morbidity, mortality and socio economic burden.
- The prevalence of osteoporosis in worldwide estimates of 200 million people are affected with osteoporosis.
- The prevalence of osteoporosis among women in india estimates of 46 million people are affected with osteoporosis.

DEFINITION:

- It is defined as a skeletal disorder characterized by low bone strength, leading to an increased risk of fragility fractures.
- The greatest bone loss occurs in women during peri menopause and is associated estrogen in sufficiency.

CLASSIFICATION:

1) Primary osteoporosis

2) Secondary osteoporosis

PRIMARY OSTEOPOROSIS:

- Primary osteoporosis is the most common form and it occurs during old age, menopausal women.

SECONDARY OSTEOPOROSIS:

- Secondary osteoporosis is diagnosed when the condition is related to another illness, nutritional complication, or as a side effect of medications.

CAUSES/ RISK FACTORS:

Factors increasing Risk	Factors decreasing Risk
➢ History of fracture ➢ Family history of osteoporosis ➢ Family history, small build,short structure. ➢ Race : Causation /Asian ➢ Gender : Post menopausal female ➢ Physical inactivity ➢ Poor calcium / vitamin D intake ➢ Heavy drinking and smoking ➢ Tobacco use	➢ Estrogen replacement therapy ➢ Large bone mass ➢ African – American male ➢ Weight bearing exercise ➢ Overall , adequate diet ➢ Non smoker

➢ Excessive caffeine , alcohol , protein intake ➢ Some medication and medical condition. ➢ Amenorrhea	

OTHERS:

- ➢ Rheumatoid arthritis
- ➢ Crohn's disease
- ➢ COPD
- ➢ Hyperthyroidism/ Hyperparathyroidism
- ➢ Mal absorption problems
- ➢ Long term use of certain medications
- ➢ Disorders of adrenal glands
- ➢ Cushing's syndrome.
- ➢ Reduced amounts of sex hormones (Estrogen and Testosterone)
- ➢ High dose oral corticosteroids
- ➢ Anorexia or bulimia
- ➢ Long periods of inactivity , such as long term bed rest

SIGNS AND SYMPTOMS:

There typically are no symptoms in the early stages of bone loss. But once bones have been weakened by osteoporosis, you may have signs and symptoms that include:

- Back pain.
- Loss of height over time
- A stooped posture
- Joint and muscle pain
- A bone fracture that occurs much more easily than expected
- Decreased physical activity.

DIAGNOSTIC FINDINGS:

Dual energy X ray absorptiometry (DEXA or DXA Scan)

X ray

- ❖ A DEXA scan can be used to help diagnose osteoporosis. It's a quick , safe and painless procedure that usually takes about five minutes , depending on the part of the body being scanned.

- Standard deviation is a measure of variability based on an average or expected value. A T Score of
  - Above -1 SD is normal
  - Between – 1 and -2.5 SD is defined as decreased bone mineral density compared with peak bone mass below -2.5 is defined as osteoporosis.
  - Fracture risk assessment tool to help predict a person's risk of fracture between the ages of 40 and 90˚

COMPLICATIONS:

- **Fracture:**
  - Wrist fractures, hip fractures and fractures of the vertebrae (bones in the spine) are the most common type of breaks that affect people with osteoporosis. However, they can also occur in others bones, such as in the arm, ribs or pelvis

TREATMENT:

1) **Drug Therapy**

Classification	Drug	Action	Side effects
Bisulphosphonates	Alendronate rise ibabdronate zotedronic acid Ibandronate	-Reduce bone loss, increase bone density and reduce the risk of spine & hip fractures. -FDA approved for both prevention & treatment.	GI upset, join pain, nausea, Heartburn
Calcitonin	Fortical	Bone fractures approved for treatment only.	Skin rash, liver diarrhea flushing, loss of appetite head back ache.
[SERM] Selective estrogen receptor modulators			

2) DIETARY MANAGEMENT:

CALCIUM:

- ❖ Eating a healthy balanced diet is recommended for everyone.
- ❖ Calcium is important for maintaining bone strength. Adults need 700mg a day.
- ❖ Having an adequate dietary calcium intake throughout life is also vital. Ministry of Health recommends the following daily intake of calcium for healthy individuals:

1 to 3 years	500 mg	200 IU
4 to 8 years	800 mg	200 IU
9 to 18 years	1,300 mg	200 IU
19 to 50 years	1,000 mg	200 IU
51 to 70 years	1,200 mg	400 IU
Over 70 years	1,200 mg	600 IU

VITAMIN-D:

Calcium helps build and maintain bone and vitamin D helps your body absorb calcium.

Sources of Vitamin D

- Sunlight
- Food
- Supplements

3)EXERCISE:

Regular weight bearing exercise is essential. Adult aged 19 to 64 should do at least 30 mints of moderate- intensity aerobic activity, such as cyclic or fast walking, atleast 3 times every week.

Physical activities are

- ➢ Walking
- ➢ Swimming

- Dancing
- Cycling
- jumping
- Strength exercise
- Balance exercise
- Flexibility exercises
- Sitting exercises

PREVENTION

Prevention is better than treatment and evidence suggests that maximizing bone density in early and middle life helps to reduce the risk of osteoporosis in later life. Steps that can be taken to help prevent osteoporosis include:

1) Life style modification:

- Not smoking
- Limiting alcohol intake
- Limiting tobacco usage
- Limiting coffee/tea intake
- Maintaining a healthy body weight

2) Exercises:

Regular weight bearing exercise is essential. Adult aged 19 to 64 should do at least 30 mints of moderate- intensity aerobic activity, such as cyclic or fast walking, atleast 3 times every week.

3) **Hormonal Replacement Therapy:**

- Considering HRT for women during menopause. it helps to increases the bone density.

4) Diet:

An adequate calcium intake and adequate amounts of vitamin D are important foundations for maintaining bone density and strength.

Calcium rich foods:

You can get calcium from foods, supplements, or a combination of the two.

We all know that milk is a great source of calcium, but you may be surprised by all the different foods you can work into your diet to reach your daily recommended amount of calcium. Use the guide below to get ideas of additional calcium-rich foods to add to your weekly shopping list.

Produce	**Serving Size**	**Estimated Calcium***
Collard greens, frozen	8 oz	360 mg
Broccoli rabe	8 oz	200 mg
Kale, frozen	8 oz	180 mg
Soy Beans, green, boiled	8 oz	175 mg

Bok Choy, cooked, boiled	8 oz	160 mg
Figs, dried	2 figs	65 mg
Broccoli, fresh, cooked	8 oz	60 mg
Oranges	1 whole	55 mg
Seafood	**Serving Size**	**Estimated Calcium***
Sardines, canned with bones	3 oz	325 mg
Salmon, canned with bones	3 oz	180 mg
Shrimp, canned	3 oz	125 mg
Dairy	**Serving Size**	**Estimated Calcium***
Ricotta, part-skim	4 oz	335 mg
Yogurt, plain, low-fat	6 oz	310 mg
Milk, skim, low-fat, whole	8 oz	300 mg
Yogurt, Greek	6 oz	200 mg
Ice Cream, vanilla	8 oz	85 mg
Fortified Food	**Serving Size**	**Estimated Calcium***
Almond milk, rice milk or soy milk, fortified	8 oz	300 mg
Orange juice and other fruit juices, fortified	8 oz	300 mg
Tofu, prepared with calcium	4 oz	205 mg
Oatmeal, fortified	1 packet	140 mg
Cereal, fortified	8 oz	100-1,000 mg
Other	**Serving Size**	**Estimated Calcium***
Mac & cheese, frozen	1 package	325 mg

Pudding, chocolate, prepared with 2% milk	4 oz	160 mg
Beans, baked, canned	4 oz	160 mg

- Cauliflower, fenugreek, spinach, ladies finger, beetroot, cabbage, figs, grapes, dates, oranges, raisins, apples banana, papaya.
- Eggs, milk, milk products, oily fish etc..,

4) SURGICAL TREATMENT:

- ✓ **Knee replacement**

CONCLUSION:

Treatment and prevention will normally focus on lifestyle changes and medications to boost bone density.